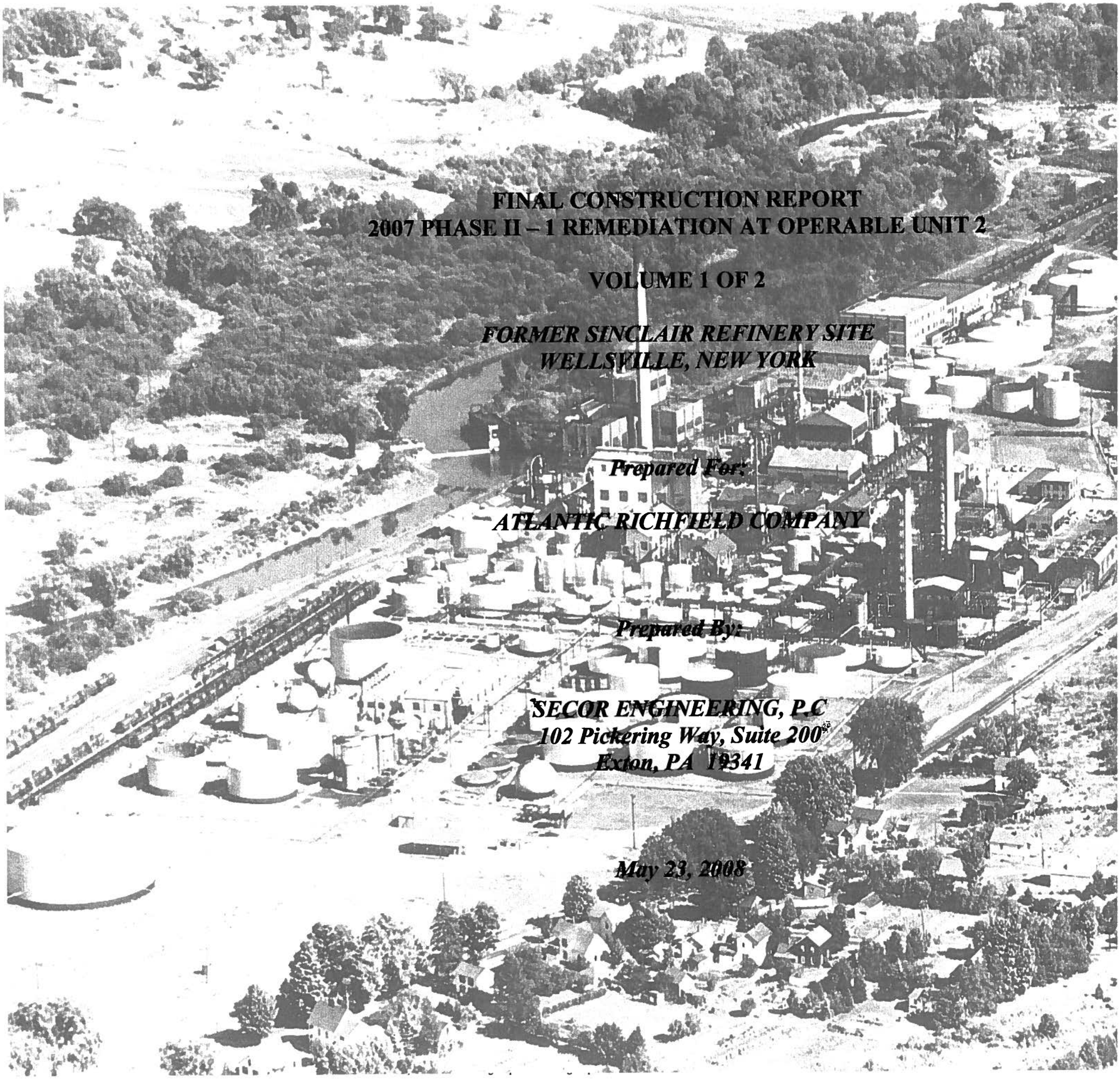

FINAL CONSTRUCTION REPORT
2007 PHASE II – 1 REMEDIATION AT OPERABLE UNIT 2

VOLUME 1 OF 2

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

Prepared For:

ATLANTIC RICHFIELD COMPANY

Prepared By:

SECOR ENGINEERING, P.C
102 Pickering Way, Suite 200
Exton, PA 19341

May 23, 2008

SECOR

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1.0 INTRODUCTION

1.1 PURPOSE

This report has been prepared in accordance with the requirements as set forth in the OU2 Record of Decision (ROD) issued by the United States Environmental Protection Agency (USEPA) dated September 30, 1991, and the Unilateral Administrative Order (UAO) entered into by Atlantic Richfield Company, effective September 8, 1992, as they pertain to the implementation of the Phase II Remedial Design Program. This report is written to document the Phase II-1 remedial design construction activities completed in 2007 and may be submitted to the USEPA. This report may be used to support the Notice of Completion and Final Design Report for Construction of the Remedial Action once the complete remedial effort is implemented.

This report is organized to provide a brief history of the site (Section 1.2) and document the construction activities completed in 2007. An overview of construction activities (Section 2.0) is followed by a detached description of the construction activities (Sections 2.1 to 2.4). Significant deviations from the approved design (deviations that may adversely impact system performance) are noted in the detailed description of the construction.

The attached appendices include the Daily Quality Assurance Reports, Weekly Quality Assurance Reports and Weekly Meeting Minutes, Submittals, As-built drawings and documentation, and photographic documentation of the 2007 Phase II-1 remedial construction work.

1.2 SITE LOCATION AND DESCRIPTION

The former Sinclair Refinery (Figure 1) is located in the Town and Village of Wellsville, Allegany County, New York, approximately 10 miles north of the New York and Pennsylvania border. The Site is irregularly shaped and is bounded to the southwest by South Brooklyn Avenue and to the northeast by the northerly flowing Genesee River.

For purposes of investigation and remediation, two distinct operable units are referenced. Operable Unit 1 (OU1) consists of a 10-acre landfill area adjacent to the southern boundary of the former refinery, referred to as the Central Elevated Landfill Area (CELA). Operable Unit 2 (OU2) consists of the 90-acre former refinery area located in the northern portion of the Site.

OU2 is currently occupied by a number of commercial/manufacturing businesses and the State University of New York (SUNY) at Alfred campus. SUNY operates a vocational–technical school at the Site consisting of programs including; auto mechanics, heating, ventilation, cooling and air conditioning (HVAC), construction, electrical and other vocational programs. Most of the former refinery structures were removed before 1964, however; some buildings from the original refinery operations remain on Site. Most of these buildings have been renovated and are now in use supporting the SUNY campus. The remainder of the original buildings still standing are vacant.

1.3 HISTORY

The refinery was built in the late 1800s to process primarily New York and Pennsylvania crude oils. The refinery was originally operated by the Wellsville Refining Company. In 1919, the facility was purchased by the Sinclair Refining Company (Sinclair). Sinclair owned and operated the facility until 1958. In 1939 and 1958, fires occurred at the refinery, causing substantial damage. The refinery was rebuilt after the 1939 fire; however, operations were terminated following the 1958 event. During the time that Sinclair owned and operated the site, the company manufactured products included heavy oils and grease from lubrication applications, light oils for fuel, lighter fluid, gasolines, aniline, naphtha, and paraffin.

When the refinery was closed, Sinclair transferred ownership of the parcels comprising the site to several entities, including the Town and Village of Wellsville. Since that time, various entities have held title to portions of the former refinery property. Acquisition of the property formerly owned by the Otis Eastern Company has provided the Atlantic Richfield Company with the area necessary for the planned construction of a Treatment Wetland System – currently under

construction – and staging areas for Phase II remedial construction and future restoration activities.

The Site was first listed on the National Priority List (NPL) in 1983. The Remedial Investigation (RI), Feasibility Study (FS), and Remedial Action at OU1 were completed in accordance with the OU1 ROD (USEPA, 1985). Requirements of the OU1 ROD included channel construction and controls within the Genesee River, consolidation of the South Landfill Area (SLA) into the CELA, relocation of certain surficial soils from OU2 to this area (as stipulated by the ROD), and capping of the CELA. OU1 is currently in the operation and maintenance (O&M) phase. This report does not document any construction activities related to the OU1 Remedial Action.

The RI/FS and Remedial Design Investigation (RDI) activities at OU2 were conducted between 1985 and 1994. The ROD and UAO for OU2 specified remedial criteria for subsurface water and surface water for the Site. The Remedial Action for OU2 was developed as a phased approached. Phase I remediation of subsurface water in OU2 involved the construction, operation, and monitoring of a subsurface water extraction and treatment system and three air sparging/soil vapor extraction (AS/SVE) systems. Operation of these OU2 remedial systems was initiated in 1995 and enhanced with an expanded AS/SVE system in December 1997. The AS/SVE systems reached asymptotic conditions following several years of operation and were deactivated (with concurrence from the regulatory agencies) in 2003. The OU2 Phase I subsurface water extraction and treatment system remain operational. This report does not document any construction activities related to Phase I of the OU2 Remedial Action.

While the Phase I water treatment systems reduced residual constituents in the subsurface, USEPA and the New York State Department of Environmental Conservation (NYSDEC) requested that a Phase II program be implemented, to enhance conditions in subsurface water at OU2. Several investigations and design reports related to the Phase II remedial effort at OU2 have been prepared and submitted to the USEPA. In November 2005, the Pre-Final (95%) Design Report Phase II Remediation at Operable Unit 2 was submitted to the EPA.

USEPA submitted comments on the 95% Design Report issued on August 15, 2006, including comments related specifically to soils along the western bank of the Genesee River north of the lower drop structure. EPA and NYSDEC requested that additional measures be taken to prevent the soils from impacting the quality of the Genesee River. In an effort to expedite the implementation of the Phase II Remedial Action, Atlantic Richfield Company (letter to the EPA dated February 21, 2007) requested that the Phase II Remedial Action for OU2 be further separated. The separation was requested so that elements of the Phase II Remedial Design could be implemented while USEPA, NYSDEC and Atlantic Richfield Company continued to investigate the remaining elements of the 95% Design Report. In a letter dated March 19, 2007, the EPA gave Atlantic Richfield Company written approval to move ahead with the phased approach.

The Phase II remedial design was divided into two phases. Phase II-1 includes the groundwater extraction system and the wetlands treatment system. (Some components – the infiltration trench; installation of the manholes A thru H and the interior guide rail systems; formation of the vertical flow wetlands; and, completion of the sedimentation pond, less the observation deck – were constructed in 2007 and documented in this report. The remaining components are scheduled for construction in the spring of 2008.) Phase II-2 includes the barrier wall, river and soil excavations, and main drainage swale. This report does not document any construction activities related to Phase II-2 Remedial Action (these actions have not been implemented).

On March 23, 2007, Atlantic Richfield Company submitted the Final (100%) Design Report Phase II-1 Remediation at Operable Unit 2. On May 14, 2007, Atlantic Richfield Company received a letter from the EPA issuing the conditional approval of the Phase II-1 100% Design Report. Atlantic Richfield Company responded to the comments included in the conditional approval in a letter dated June 5, 2007.

Atlantic Richfield Company contracted Compass Environmental Incorporated to perform the remedial construction activities as set forth in the 100% Design Report. Remedial construction began on July 23, 2007, following the submittal of the Final Design Modification/Clarification

Request (FDMCR) (Appendix D) form to the EPA on July 9, 2007. The FDMCR documents design modifications from the approved Phase II-1 100% Design Report.

The Initial Testing Program (ITP) Plan was submitted to the EPA on September 21, 2007, pursuant to the terms as stated in the Administrative Order No. II CERCLA-20216, Statement of Work, Section F, Subsection 4. (No testing has been conducted to date except for the water balance testing of the sedimentation pond liner.)

Construction activities for the Phase II-1 Remedial Action ended on November 15, 2007; however, not all elements of the Phase II-1 Remedial Design were constructed. The remaining construction activities are scheduled to resume in the spring of 2008.

2.0 PHASE II-1 CONSTRUCTION ACTION

The Phase II remedial program was developed to further advance subsurface water remedial efforts towards chemical-specific applicable or relevant and appropriate requirements (ARAR) and to eliminate the migration of constituents of interests (COIs) in subsurface water to the Genesee River. The proposed Phase II-1 remedy for Operable Unit 2 (OU2) includes the Subsurface Water Management System and a majority of the Treatment Wetland System.

This report documents the remedial construction efforts completed for the Phase II-1 Remedial Design from July through November 2007. Specifically, this report documents the construction of an approximately 400-foot pilot infiltration trench, an additional approximately 2,800-foot infiltration trench, eight manholes and the sedimentation pond (elements of the Subsurface Water Management System and the Treatment Wetland System).

A 3,200-foot infiltration trench was constructed to intersect subsurface water flow prior to flowing into the Genesee River. The infiltration trench was constructed to include a series of manholes, A thru H, each designed to house transfer pumps used to control the water level in the trench as well as the flow of subsurface water at the site. Subsurface water removed from the manholes will pass through a flow meter/totalizer, check valve, and a ball valve, before being directed into a common header that will convey subsurface water from multiple trench manholes to the Treatment Wetland System. (Installation of the interior components – pumps, flow meters/totalizers, check valves and ball valves was not completed in 2007.)

The Treatment Wetland System has been designed to be capable of degrading a wide variety of organic compounds (principally petroleum hydrocarbons), as well as removing metals (principally iron) from the recovered groundwater. Major components of the Treatment Wetland System include a cascade aerator; sedimentation pond; sludge dewatering beds; surface flow wetlands system; and a vertical flow wetlands system. Construction of the sedimentation pond, excluding the wooden deck, was completed. The construction of the sedimentation pond included the installation of a geomembrane liner, rip-rap, and the water balance test (in accordance with the specifications). The vertical flow wetlands and the surface flow wetlands

are currently under construction – some preliminary grading was completed for these components. The remaining components of the Treatment Wetland System have not yet been addressed.

Although all of Phase II-1 has yet to be completed, this report documents the construction of the aforementioned elements of the Phase II-1 design from July to November 2007. Sections 2.1 through 2.4 provide in-depth details including start and completion dates, changes to the original design, and major construction issues for the pilot trench, Treatment Wetland System and infiltration trench.

2.1 PILOT TRENCH/MANHOLE H

Prior to constructing the full scale infiltration trench, a 400-foot pilot trench was constructed at the southern portion of the site on the former Otis Eastern property, near the Treatment Wetland System. Construction of the pilot trench was completed to identify any constructability issues that might negatively impact construction of the full scale trench. The pilot trench design included manhole H, located in the middle of the 400-foot trench, and an 11-foot diameter corrugated HDPE infiltration ring. The design of manhole H includes transfer pumps that control the water level in the trench and the flow of subsurface water in the area. The extracted subsurface water will be pumped from the manhole through an underground header to the Treatment Wetland System.

The pilot trench was designed to be approximately 20 feet deep and backfilled with gravel – to a depth of approximately 10 feet – that is more permeable than the surrounding native material. The gravel lens was designed to provide a permeable area to capture groundwater moving into the trench and provide a conduit to the extraction manhole. A layer of geotextile fabric was placed on top of the gravel to prevent the infiltration of fines through the gravel lens and into the collection pipe. The gravel and geotextile fabric were then covered by native backfill.

Excavation of manhole H began on August 13, 2007. While attempting to install manhole H on August 16, the quantity of water entering the excavation exceeded the capacity (approximately

1,000 gpm) of the pumps used to extract groundwater from the excavation. Approximately 30,000 gallons of groundwater was removed from the excavation and pumped to three frac tanks behind the Water Treatment Building located at the northern end of the site, southwest of manhole B. The water was treated and discharged through the existing wastewater treatment system. (Appendix A – August 16, 2007 and Appendix B – August 17, 2007) The installation of manhole H was postponed until an alternative construction approach was developed and approved.

A 15-foot long, 10-foot diameter steel pipe was proposed to be used to assist in the installation of the manhole. The steel pipe was placed in the excavation around the manhole location, preventing groundwater from infiltrating from the sides of the excavation while the lower sections of the manhole were set in place. Consequently, the 11-foot diameter corrugated HDPE ring, included in the original design, could not be used due to the space constraint between the steel pipe and the manhole. Straight sections of 4-inch perforated HDPE pipe were substituted for the 11-foot HDPE ring and designed to run horizontally approximately 20 to 30 feet north and south of manhole H (within the trench gravel backfill) and then slope upwards on a 45 degree angle. Due to constructability issues, the HDPE piping was not wrapped in geotextile fabric, a deviation from the original design.

The 10-foot diameter pipe arrived on site on August 22, 2007. Prior to installing the pipe, approximately 30,000 gallons of additional groundwater was pumped from the excavation. Section 1 (the base section) of manhole H was successfully installed on August 23, followed by Section 2 and Section 3. (To limit the dewatering of subsequent manholes, the remaining manholes were constructed to include a deeper base piece (5.5 feet) and a higher section pieces (six feet) – about a foot larger than the dimensions of manhole H.)

Excavation of the pilot trench beyond manhole H began on August 28, 2007. Approximately 60 feet of the pilot trench to the north of manhole H was excavated and, as alternatively designed, the corrugated pipe was installed approximately 17.2 feet below ground surface (bgs), horizontally, approximately 20 feet and then sloped upward on a 45 degree angle an additional 5 feet. On August 29, the pilot trench to the south of manhole H was pre-trenched to

approximately 12 feet bgs. The corrugated pipe extending south of Manhole H was installed approximately 17.4 feet bgs, horizontally, a total of 25 feet (the pipe was not placed at a 45 degree angle, as originally planned). (See Table 2 for manhole H pipe invert elevations.) The trench to the north and south of manhole H was backfilled with the appropriate amount of aggregate stone, geotextile fabric and the first lift of native soil. The north leg of the pilot trench was completed on September 5. The pilot trench, spanning 200 feet south of manhole H, was completed on September 10, 2007.

Excluding the first lift of native soil placed north and south of the pilot trench, ten additional lifts of native backfill (each placed in approximately 12-inch loose lifts) were added to the total length of the pilot trench on October 10 and October 11, 2007. Compaction test results indicated that the lifts met the minimum moisture and compaction requirements, as detailed in the specifications.

On November 1, the interior of manhole H was cleared of groundwater, excess stone and silt to prepare for the installation of the interior guide rail system. Groundwater began infiltrating back into the manhole through the grout around the south outlet piping. The guide rail system was not installed due to the continuous infiltration of groundwater. Section 4 was installed on November 2, 2007, and the manhole was covered on November 7 following Compass's decision to install the guide rails and address the infiltration issue in the spring.

Throughout the installation of manhole H and the construction of the pilot trench, multiple deviations from the original design were implemented. Straight sections of perforated HDPE pipes extending from two sides of the manhole into the trench gravel backfill were substituted for the 11-foot HDPE infiltration ring around all manholes with the exception of manhole H. In addition, the bottom of the trench was excavated beyond the design elevation effectively increasing the ability of the trench to lower the groundwater in and around the manhole. The deviations are not expected to negatively impact the overall operation of the trench. Similarly, deviations to backfill elevations and the width of the trench are not expected to affect the overall effectiveness of the infiltration trench. The manhole pipe invert elevations and trench bottom

and top of gravel elevations are included in Section 2.3 of this report. These elevations are also included on the surveyor's as-built drawings and documentation included as Appendix E.

2.2 TREATMENT WETLANDS SYSTEM

2.2.1 Sedimentation Pond

Prior to commencing construction of the sedimentation pond, a request for change was issued regarding the thickness of the high density polyethylene (HDPE) geomembrane liner. As stated in specification 02661, Section 2.1, the liner was to be 60-mil smooth for bottom of basins and 80-mil textured for basin. Compass requested that the specification be revised to allow for the use of 80-mil HDPE on the basin bottom and the sides. The following amendment was approved on July 9, 2007. (Appendix C - Submittals 033 and 052)

Construction of the sedimentation pond (Figure 2) began on August 1, with the excavation of the existing grade to about 1510 feet above mean sea level (msl). The upper tier of the pond, formed using a 3:1 slope, was constructed from about 1510 feet msl to approximately 1506 feet msl, leveling out at a 6-foot wide bench spanning the perimeter of the pond. The lower tier of the pond, based on the same 3:1 slope, was constructed from about 1506 feet msl to about 1501.5 feet msl, the bottom of the pond. Soil excavated from the upper tier of the pond was a combination of clay and sandy silts, mixed with rocks ranging from one foot to 1.5 feet in size – a suitable material to be used as backfill along the infiltration trench. Excavation of the sedimentation pond was completed on August 10, 2007.

On August 13, soil was temporarily removed from a portion of the eastern bank of the pond to allow for the installation of the HDPE pipe required to transport iron precipitate sludge to the sludge dewatering beds. A 6-inch diameter HDPE pipe was placed at 1500.99 feet msl, approximately 0.6 feet deeper than the original design, spanning from the center of the sedimentation pond towards the proposed location of the sludge dewatering beds. The difference in elevation may require revision of future work – primarily the lowering in elevation of the sludge dewatering pump station and the sludge dewatering beds. Additional soil was removed from the northwest corner of the pond to 1505.49 feet msl where a similar HDPE pipe was

installed, extending from the northwest corner of the pond to the surface flow wetlands hydraulic control splitter structure. (Refer to Appendix E for As-built drawings and documentation for pipe elevations.)

A fill/bedding material was used to line the bottom and sides of the pond due to the large cobbles encountered while excavating the pond. The fill material was used as a protective barrier between the native soil (which contained rocks larger than 1-inch in diameter) and the geomembrane liner. The fill material was placed around the pond upon arrival beginning on August 15, 2007. A suitable sub-base was installed by August 20, 2007.

Due to moisture from groundwater seeps, compaction testing documentation (provided by Atlantic Testing Laboratories) indicated that the basin of the pond did not meet the compaction criteria for soil (in three out of the four test locations) placed within one foot of a liner. The specification requires that soil be compacted to a minimum of 95% density at ± 3 percent of optimum moisture content. (See Appendix A – September 25, 2007 for test locations and test results.)

A Pre-Liner Installation Meeting was held on September 25, 2007 to discuss concerns regarding the installation of the geomembrane liner. The groundwater observed in much of the bottom and northern embankment of the pond and the quantity and size of stones observed in the subgrade were not suitable for the installation of the geomembrane liner. Seaming could not be completed in the presence of water. As a result, a decision was made to remove the saturated material, replace it with a dryer soil and subsequently remove any rocks larger than one inch in size prior to installing the liner. Compaction testing could not be conducted in the wet areas, thus, a determination of the suitability of the soils to support the walkway could not be completed. The observation deck was not constructed. Two alternative options were proposed for the design of the observation deck in an effort to eliminate the need to construct the deck supports on soils that were not tested: a shorter walkway with a removable floating end section, and the elimination of the observation deck. The alternative approach for the deck has not been discussed with USEPA. The deck was not constructed during the 2007 construction effort. No decision has been made concerning the design of the deck.

On September 26, the pond was inspected by SECOR's Resident Engineer, Rick Wagner from North America Wetlands Engineering (NAWE), and Vong Noravong from Landsaver Environmental. The condition of the subgrade was accepted and approved for the installation of the geomembrane liner.

Ten panels were cut, identified, and placed around the southern portion of the pond on September 26, accounting for a total of 12,216.5 square feet of 80-mil textured HDPE. Field seam tests were conducted at the beginning of each shift both in the morning and after lunch, as required by the specifications. Any remaining rocks greater than one inch were removed from the subgrade and as the seams were fused together, the anchor trench was backfilled with approximately 12-inch loose lifts and compacted to approximately 8 inches.

On September 27, additional fill material arrived on-site. The saturated fill material, placed in the northern portion of the pond on August 15, was removed and new dry fill material was installed to prevent the moisture from reaching the geomembrane seams during the fusing process.

Sixteen additional panels were cut, identified, and placed around the remaining portion of the pond on October 1, accounting for 15,995.5 square feet of 80-mil textured HDPE – a grand total of 28,212 square feet. Destructive tests were performed on the seams between Panel 14 (P#14) and Panel 15 (P#15), as well as Panel 25 (P#25) and Panel 26 (P#26). Fusing of the panel seams continued on October 2, and additional field seam tests were conducted over the course of the day. On October 3, seaming was completed and each individual seam was pressure tested and vacuum tested in accordance with the specifications to ensure that there were no leaks; no leaks were observed. The anchor trench was backfilled and compacted following pressure and vacuum testing, in accordance to the moisture and compaction criteria stated in the specifications.

Approximately 243 tons of rip-rap was placed around the upper tier, between elevations 1510 feet msl and 1506 feet msl of the pond on November 5 and November 6, 2007. (In order to properly place the water balance testing apparatus within the pond, rip-rap was not placed on

geomembrane Panel 25 (P#25) until the apparatus was anchored in place). A water line located at the north end of the site (approximately 200 feet north of manhole A) was repaired in order to supply the pond with the required amount of water needed to conduct the water balance test. Water was pumped to the pond from the fire hydrant located onsite via water hoses supplied by Wellsville's Fire Department. On November 8, the water balance testing apparatus was installed in the northeast corner of the pond and rip-rap was placed on geomembrane Panel 25 (P#25).

Data for the water balance test was collected for seven days straight beginning November 8, monitoring the change in pond water and the control drum change. On November 15, the Water Balance Testing Data Collection Sheet (Appendix C: Submittal 86, November 20, 2007) was sent to NAWE to be evaluated. NAWE concluded that the seepage rate for the sedimentation pond was well within accepted limits.

Based on the documentation drawings provided and field observations, the sedimentation pond was constructed in substantial compliance with the design document. The HDPE liner thickness originally detailed in the design was revised to allow for 80-mil HDPE to be used over the entire pond. The 6-inch diameter HDPE pipes placed within the pond were not pressure tested in accordance with the specifications. In addition, the northern most portion of the subgrade was not compaction tested as required by the specifications.

2.2.2 Surface Flow Wetlands

Excavation of the surface flow wetlands (SFW) (Figure 3) began on August 17, 2007. Soil excavated from SFW 1 was used to form the first lift of soil along the eastern berm and half of the northern berm of SFW 1, 2, and 3. (Note that SFW 1 is the southern-most SFW. SFW 4, not installed during this phase of the project, is the northern-most SFW.) As the first lift was compacted on August 22 pumping was observed, most likely due to excess moisture in the soil. Additional soil was added to the affected areas and the soils were re-compacted. After the base of the berm was re-compacted, the lift was noticeable greater than 8 inches (approximately 1.5 feet). Ten inches of soil was removed and the berm was once again compacted. (Additional compaction testing was not performed on the berm of the SFW during this phase of

construction.) Construction of the SFW halted temporarily on August 22, 2007 to allow Compass to focus efforts on the installation of manhole H.

Excavation of the SFW resumed on September 7, 2007. All excavated material from the SFW was transported to the pilot trench and used a backfill. Excavation of the SFW halted on September 12, 2007. On October 2, Bed 1 and Bed 2 of SFW 1 were excavated to the depths as indicated on the survey stakes. Bed 1 of SFW 2 was excavated to depth on October 3, 2007.

On October 16, the berm separating Bed 1 and Bed 2 of SFW 1 was removed and the remaining portion of SFW 1 was excavated. The soil was hauled to the vertical flow wetlands and used for the construction of the vertical flow wetlands berm. Excavation of SFW 2, 3, and 4 continued until November 1, 2007. Soil removed during this time was hauled to the infiltration trench where it was used as backfill.

The SFW were not completed as designed during the 2007 construction season. Final grades on the SFW cells were not provided by Compass. No soil compaction testing was completed to meet the design specifications for the SFW cells. No piping to, from, or within the SFW area was installed and tested in accordance with the specifications.

2.2.3 Vertical Flow Wetlands

Clearing and grubbing of the vertical flow wetlands (VFW) began on August 1, 2007. A small red building, located southeast of the red machinery building, was demolished due to its close proximity to the VFW cells. The area encompassing the VFW was completely cleared of vegetation and debris by August 2, 2007.

Construction of VFW Cells 2, 4, 6, 7 and 8 (Figure 4) began on August 2, 2007. Soil excavated from the interior of the sedimentation pond was hauled to the VFW to be used in the construction of the five cells. Two lifts of soil were added to the ground surface (1500 feet msl), forming the base of the wetlands berm. Each lift was about 12 inches thick and compacted to approximately

8 inches. On August 20, the third lift of soil was added to the berm. The fourth lift of soil was added on September 11, 2007.

Compaction testing at the VFW was not conducted until September 19. A portion of the berm was excavated to each approximate lift elevation and tested in accordance to the specifications. Testing conducted on the fourth lift failed at three locations on September 19 and September 21, 2007; a sample of the soil was sent to the lab to be re-tested. The fourth lift was tested on October 9 using a new proctor and the results met the requirements as stated in the specifications.

On October 16, following the addition of the fifth lift of soil to the VFW berm, the interior of the cells were cut and shaped to achieve the required bed elevation of 1499 feet msl and a 3:1 interior slope. Two additional lifts – lift 6 and lift 7 – were placed on the wetlands berm and compacted on October 17, 2007. (Soil used to form these lifts was obtained from the excavation of the SFW.) Compaction testing was conducted and both lifts met the required moisture and compaction criteria.

On October 26, a portion of the west berm was excavated approximately 15 feet south of the north bank of Cell 7 in order to test the fifth lift (Atlantic Testing Laboratories documentation was never received for this lift). The test results were within the criteria given in the specifications.

The final lift of soil, lift 8 (1505.5 feet msl), was not completed during this phase of construction. Also, the HDPE liner was not constructed in the five cells during this phase of the construction. No piping was completed in or to the VFW. No piping to, from or with the VFW area was installed and tested in accordance with the specifications.

2.3 INFILTRATION TRENCH

Construction of the full scale infiltration trench and manholes began on September 13, 2007 and was completed on November 2, 2007. Each segment of the trench was designed to be excavated to a predetermined depth. Approximately 29,000 tons of soil was removed during the excavation of the 3,200-foot infiltration trench and relocated to the soil staging area. The trench was backfilled with gravel and a geotextile fabric was placed over the gravel. A lift of native soil was added to the fabric in order to anchor the fabric in place. The stockpiled soil was dried, in some cases with the addition of fly ash – as noted in Table 3 – and reused as the remaining backfill along the infiltration trench

The trench was not installed exactly as depicted in the design drawings. An approximately four foot wide, twelve foot high, twenty foot long trench box was used in the excavation. Throughout most of the trench construction, the trench was excavated to be wider than four feet (generally five to about seven feet wide) and filled with gravel. In some cases, the trench depths exceeded the requirements of the design documents; however, no negative impacts are anticipated for the system operation and performance. In cases where the trench depth is less than the design elevation, the variance (not greater than 0.6 feet at any measured location) is not expected to significantly impact the overall system performance or operation. The top of gravel elevation was exceeded (gravel installed at elevations greater than design) in most measured locations. Excess gravel will provide for a larger permeable lens to capture and transfer groundwater and is not expected to negatively impact the system operation or performance. In cases where the top of gravel elevation is lower than the design elevation, the variance is within 0.2 feet; these deficiencies are not expected to significantly impact the system operation or performance.

Table 1 documents the trench bottom (limits of excavation) elevation, the top of gravel elevations, and the design elevations at locations along the infiltration trench. In addition, the table shows the variance from design elevations. The elevations included in this table are based on the Infiltration Trench/Manhole As-Built drawings and documentation located in Appendix E

and are consistent with the observations of SECOR quality assurance (QA) personnel during the construction of the trench.

TABLE 1: FORMER SINCLAIR REFINERY
2007 PHASE II-1 CONSTRUCTION - INFILTRATION TRENCH

Survey Date	Survey Location	Bottom of Trench (ft. msl)				Top of Gravel (ft. msl)			
		Survey Ref. No.	Design Elev.	As-Built Elev.	+/-	Survey Ref. No.	Design Elev.	As-Built Elev.	+/-
9/18/2007	~ 110' S of MH-A	1034	1477	1476.1	0.89	1035	1486	1486.9	-0.9
10/10/2007	~ 20' N of MH-A	1108		1476.5	0.5	1109		1486.3	-0.3
10/15/2007	~ 35' S of MH-B	1112	1477	1476.4	0.6	1113	1489	1488.9	0.1
9/24/2007	~ 130' N of MH-C	1042	1477	1476.9	0.1	1043	1490	1490.6	-0.6
10/17/2007	~ 85' N of MH-C	1119		1477.1	-0.1	1120		1490.4	-0.4
10/15/2007	~ 20' S of MH-C	1115		1476.3	0.7	1116		1490.1	-0.1
9/27/2007	~ 135' N of MH-D	1047	1482	1482.6	-0.6	1048	1490	1489.9	0.1
10/19/2007	~ 20' S of MH-D	1124		1480.7	1.3	1125		1489.8	0.2
10/1/2007	~ 40' N of MH-E	1078	1482	1482.1	-0.1	1079	1490	1490.5	-0.5
10/29/2007	~ 15' N of MH-E	1152		1480.9	1.1	1153		1490.4	-0.4
10/25/2007	~ 30' S of MH-E	1144		1478.5	3.5	1145		1490.8	-0.8
10/3/2007	~ 105' S of MH-F	1086	1482	1482.1	-0.1	1089	1490	1489.9	0.1
10/24/2007	~ 15' N of MH-F	1134		1480.5	1.5	1135		1490.5	-0.5
	~ 20' S of MH-F	1136		1480.3	1.7	1137		1490.9	-0.9
10/8/2007	~ 165' S of MH-G	1097	1482	1482.1	-0.1	1098	1489	1489.1	-0.1
10/25/2007	~ 25' S of MH-G	1142		1481.5	0.5	1143		1491.3	-2.3

Note: Yellow highlighted variances indicate as-built conditions less than design conditions. As-built trench bottom elevations higher than the design elevations represent a less than design condition. As-built top of gravel elevations less than design elevations represent a less than design condition.

The trench was not constructed in sequence – from north to south – due to manhole locations; unidentified concrete structures; storm sewer lines; and unstable building foundations (refer to **Table 3** for the construction dates of the full scale trench).

The manhole depths in some instances exceeded the requirements of the design drawings. This is not expected to present an operational problem to the overall effectiveness of the system.

Manhole elevations lower than the design elevations provide an opportunity to extract groundwater to below design elevations.

Table 2 documents the measured as-built elevations of the pipe inverts for manholes A to H. The following elevations are based on the Infiltration/Manhole surveyor field notes and documentation provided in Appendix E. Note that the As-Built drawings pipe invert elevations do not match the elevations listed in the table below. The surveyor recorded top of pipe elevations on the As-Built drawing and not invert elevations.

TABLE 2: FORMER SINCLAIR REFINERY
PHASE II-1 CONSTRUCTION - MANHOLES

MH	Date	North Pipe Invert (ft.)				South Pipe Invert (ft.)			
		Survey Ref. No.	Design Elev.	As-Built Elev.	+/-	Survey Ref. No.	Design Elev.	As-Built Elev.	+/-
A	10/10/07	1101	1477	*1475.28*	1.72	1102	1477	*1475.48*	1.52
B	10/15/07	1111	1477	Not available	----	1110	1477	*1475.41*	1.59
C	10/17/07	1117	1477	*1476.47*	0.53	1118	1477	*1476.59*	0.41
D	10/19/07	1122	1482	*1481.15*	0.85	1123	1482	*1481.08*	0.92
E	10/29/07	1154	1482	*1481.47*	0.53	1155	1482	*1481.69*	0.31
F	10/24/07	1131	1482	*1481.55*	0.45	1132	1482	*1481.44*	0.56
G	10/25/07	1140	1482	*1480.97*	1.03	1141	1482	*1481.07*	0.93
H	9/12/07	1021	1482	*1481.81*	0.19	1020	1482	*1482.57*	-0.57

On October 1, while trenching an approximately 15 foot long section of the trench adjacent to the SUNY Masonry Building, a portion of the rear brick building wall collapsed. The trench was immediately backfilled in order to support the foundation and rear wall. The remaining portion of the trench between the adjacent manholes near the building was excavated, backfilled with aggregate stone, geotextile fabric and native backfill on November 5 and November 6, 2007. A concrete footer was formed and poured along the perimeter of the rear wall the following day. The remaining loose brick located between the two central most windows were removed and wood beams were installed to support the roof. SUNY requested that Compass provide building

materials so that SUNY could repair the building; construction materials requested by SUNY were delivered to the Masonry Building on November 9, 2007.

Table 3 and **Table 4** provide further details relating to the construction of the infiltration trench and the installation of manholes A thru G, respectively. Significant deviations from the design documents are also noted.

TABLE 3: INFILTRATION TRENCH CONSTRUCTION SUMMARY TABLE

Trench Section	Excavation	Gravel Fill/Installation of Geotextile Fabric	Soil Backfill/Compaction	Comments
Sta 32+00 to 28+00	September 13, 2007 - September, 19, 2007, October 8, 2007, and October 10, 2007	September 14, 2007 - September 19, 2007, and October 10, 2007	September 25, 2007 - September 26, 2007, October 1, 2007, October 4, 2007, October 18, 2007 - October 19, 2007, and October 22, 2007	Groundwater was encountered roughly 13.5 feet below ground surface (bgs) 200' North of Manhole A.
				Encountered a water line approximately 200 feet North of Manhole A.
				The trench was relocated from Station 31+00 to 28+00 approximately 10 feet to the east to accommodate existing underground utilities. See the As-Built drawings provided in Appendix E.
				The stake marking the location of Manhole A was incorrectly positioned along the trench; the stake for Manhole A was repositioned 25 feet south to the correct location, approximately 200' south of the beginning of the trench.
				Fly ash was added to the backfill in order to meet the required compaction criteria along the trench. (Appendix A – October 4, 2007.)
				Backfill placed around Manhole A did not initially meet the compaction criteria. A sample was taken to the lab to be tested. A new proctor (proctor of 121, moisture content of ± 9.5) was received on October 18, 2007 and backfilling resumed in accordance with design documents. Fly ash was used in lifts 1 to 11 (out of 17 lifts) around Manhole A. (Appendix A – October 18, 19 and 22, 2007)
Sta 28+00 to 24+00	September 19, 2007 - September 24, 2007, and October 12, 2007	September 19, 2007 - September 24, 2007, and October 12, 2007	September 25, 2007 - September 26, 2007, October 15, 2007, October 22, 2007, and October 25, 2007	Encountered a storm sewer line 40 feet north of Manhole B roughly perpendicular to the trench.
				Lithology approximately 45 feet North of Manhole B: 0 to 7' bgs: brown, silt clay with some sand and little gravel, trace of cobbles, dry stiff, cohesive; 7-17' bgs: reddish-brown gravel, fine to coarse, well rounded, damp to wet with a trace to little cobbles, became saturated at 12-14' bgs; 17-20' bgs: bedrock transitioning to blue/gray silty shale, saturated, soft, cohesive.
				Encountered active water discharge line from water treatment building to Genesee River perpendicular to the trench. Used trench box to excavate under water line (The trench at this point was dug 2-3' deeper than normal. Additional gravel was used to meet the appropriate elevation.)
				The gravel lens approximately 80 feet North of Manhole B was constructed 0.1 feet less than required.

Trench Section	Excavation	Gravel Fill/Installation of Geotextile Fabric	Soil Backfill/Compaction	Comments
				Fly ash was used in lifts 3 to 7 (out of 12 lifts) around Manhole B. (Appendix A – October 22, 2007)
Sta 24+00 to 20+00	September 24, 2007 - September 27, 2007, October 15, 2007 - October 17, 2007, and October 30 - November 2, 2007	September 24, 2007 - September 27, 2007, October 15, 2007 - October 17, 2007, and October 30 - November 2, 2007	October 1, 2007, October 4, 2007 - October 5, 2007, October 26, 2007, and November 2, 2007	Lithology approximately 97' North of Manhole C: 0-5' bgs: reddish-brown/black sand, pieces of wood, stones, cobbles, some silt and broken pieces of PVC; 5-12' bgs: black coarse sand, some gravel with stones and cobbles greater than 1" in size; 12-19' bgs: black gravel and silty sands, stones and cobbles greater than 1" in size. Encountered groundwater approximately 17' bgs.
				The bottom of the trench was dug to approximately 1477.12 feet approximately 90 feet North of Manhole C, 0.12 feet more than required.
				Encountered an 18" abandoned clay tile storm sewer approximately 45 feet South of Manhole C perpendicular to the trench.
				Excavation of infiltration trench next to SUNY HEO building was halted due to the instability of the adjacent buildings foundation and underlying soil. The trench was temporarily backfilled until an alternative shoring method could be devised.
				Encountered a storm sewer box with a 24" line approximately 220 feet South of Manhole C perpendicular to the trench.
Sta 20+00 to 16+00	September 27, October 17, 2007 - October 22, 2007	September 27, October 17, 2007 - October 22, 2007	October 29, 2007 - October 30, 2007	Encountered a concrete structure from approximately 120 feet North of Manhole D to approximately 200 feet South of Manhole D. This portion of the trench was skipped.
				Lithology approximately 20' North of Manhole D: 0-12' bgs: brown/black sand, some silt, pieces of rock, stones and cobbles; 12-15' bgs: dark gray/black gravel and clayey sands, stones and cobbles greater than 1" in size. Encountered groundwater approximately 14' bgs.
				Encountered a 36" reinforced concrete pipe (RCP) approximately 100 feet South of Manhole D perpendicular to the trench.
				Lithology approximately 100' South of Manhole D: 0-12' bgs: reddish-brown sand, some clay, and stones and cobbles greater than 1" in size; 12-15' bgs: dark gray/black coarse gravel and silty sands, stones and cobbles greater than 2" in size. Encountered groundwater approximately 12' bgs.

Trench Section	Excavation	Gravel Fill/Installation of Geotextile Fabric	Soil Backfill/Compaction	Comments
Sta 16+00 to 12+00	September 28, 2007, October 1, 2007, October 22, 2007, October 25, 2007, and November 5, 2007 - November 6, 2007	September 28, 2007, October 1, 2007, October 22, 2007, October 25, 2007, and November 5, 2007 - November 6, 2007	October 5, 2007, October 30, 3007, and November 2, 2007	Lithology approximately 175' North of Manhole E: 0-11' bgs: reddish-brown/black sand, some gravel and silt, and stones and cobbles; 11-17' bgs: dark gray coarse gravel and some silty sands, stones and cobbles greater than 2" in size. Encountered groundwater approximately 12' bgs.
				Encountered a concrete structure (storm water drain) roughly 70 feet North of manhole E to approximately 67 feet North of Manhole E, approximately 8 feet bgs
				As excavation progressed along the SUNY Masonry Building, a portion of the rear brick wall collapsed. The trench was temporarily backfilled and the remaining portion of the trench along the building was skipped.
				Fly ash was added to the backfill in order to meet the required compaction criteria along the trench. (Appendix A – October 5, 2007.)
Sta 12+00 to 8+00	October 1, 2007 - October 4, 2007 and October 24, 2007	October 1, 2007 - October 4, 2007 and October 24, 2007	October 8, 2007, and November 1, 2007	Lithology approximately 150' North of Manhole F: 0-10' bgs: grey to dark grey sand and gravel, some silt, stones, cobbles, and roots; 10-17' bgs: dark grey coarse gravel, some sand with lots of stones, and pieces of cobbles greater than 1" in size. Encountered groundwater approximately 15' bgs.
				Encountered a 36" RCP storm sewer line approximately 127 feet South of Manhole F perpendicular to the trench.
				Lithology approximately 150' South of Manhole F: 0-7' bgs: dark brown sand, some gravel with pieces of rock, stones and cobbles greater than 1" in size; 7-17' bgs: dark grey coarse gravel, some sand, stones, and cobbles greater than 2" in size. Encountered groundwater approximately 12-14' bgs.
				Fly ash was added to the backfill in order to meet the required compaction criteria along the trench. (Appendix A – October 5 and 8, 2007.)
				Due to the amount of groundwater encountered at Manhole F, the lower lifts of backfill had to be bridged in order to meet the compaction requirements, thus reducing the total number of lifts required to backfill the trench. (Thirteen lifts were required to backfilled the trench; 12 lifts were placed and compaction tested.)

Trench Section	Excavation	Gravel Fill/Installation of Geotextile Fabric	Soil Backfill/Compaction	Comments
Sta 8+00 to 4+00	October 3, 2007 - October 8, 2007, and October 25, 2007 - October 26, 2007	October 3, 2007 - October 8, 2007, and October 25, 2007 - October 26, 2007	October 8, 2007 - October 10, 2007, and November 1, 2007	Lithology approximately 100' North of Manhole G: 0-7' bgs: dark brown/grey sand, some gravel with stones and cobbles; 7-16' bgs: dark grey coarse gravel, some sand with stones, and cobbles greater than 1" in size. Encountered groundwater approximately 10-11' bgs.
				Excavated across gas line perpendicular to the trench. The trench box was not used for this portion of the trench.
				Lithology approximately 100' South of Manhole G: 0-5' bgs: brown sand and gravel, and pieces of stones and cobbles greater than 1" in size; 5-16' bgs: dark grey coarse gravel, some sand, lots of stones and cobbles greater than 2" in size. Encountered groundwater approximately 8' bgs.
				Due to the amount of groundwater encountered at Manhole G, the lower lifts of backfill had to be bridged in order to meet the compaction requirements, thus reducing the total number of lifts required to backfill the trench. (Thirteen lifts were required to backfilled the trench; only 10 lifts were placed and compaction tested.)
				Fly ash was added to the backfill in order to meet the required compaction criteria along the trench. (Appendix A – October 8, 2007.)
				Fly ash was used in lifts 1 to 6 (out of 10 lifts) around Manhole G. (Appendix A – November 1, 2007)
Sta 4+00 to 0+00	August 28, 2007 - September 10, 2007	August 28, 2007 - September 10, 2007	October 9, 2007 - October 11, 2007	See Section 2.1: Pilot Trench/Manhole H
				Two lifts of backfill were placed on October 11, 2007 without a proctor. A sample of the material was taken back to the lab to be tested. The lifts were removed and backfilled and compacted with suitable material to meet the design requirements. See Appendix A – October 11, 2007.

TABLE 4: MANHOLE INSTALLATION

Manhole	Inspection Upon Arrival	Excavation	Installation of Manhole Sections	Pipe Invert Elevation (ft.)				Guide Rail Installation	Cover Installation	Comments
				North	North Pipe Length (ft)	South	South Pipe Length (ft)			
A	Sept 26, 2007	Oct 8, 2007	Oct 9 - Oct 10, 2007	1475.28	~25 ft horizontally	1475.48	~25 ft horizontally	Oct 25, 2007	Oct 22, 2007	A layer of gravel was observed approximately 10 feet bgs. Groundwater was encountered at 12 feet bgs. At 15 feet bgs, the soil contained more silt and contained less gravel. Multiple attempts were required to successfully install the manhole sections: 1) Sections 1 and 2 were successfully installed within the manhole trench box; however, the unit floated on the groundwater; 2) excessive force on the green nylon rope used to position the two sections over the manhole trench box caused the corrugated piping to dislodge from Section 1; 3) the 10-foot diameter pipe was driven into the ground and approximately 5 feet of water was pumped from the interior of the pipe. Section 1 was lowered into place, however, the bottom of the manhole was not at the designed elevation and required additional excavation work; 4) Section 1 floated again on the groundwater; 5) Approximately 132 cubic feet of water was supplied by the Fire Department in order to sink the base section into place. Due to constructability issues, the 4-inch diameter HDPE piping was not wrapped in geotextile fabric to the north or south of manhole A. The guide rail system was installed in manhole A, however; the interior components – pumps, flow meters/totalizers, check valves and ball valves – were not installed. No testing or measuring of the guide rail system or pump system was conducted and/or received

Manhole	Inspection Upon Arrival	Excavation	Installation of Manhole Sections	Pipe Invert Elevation (ft.)				Guide Rail Installation	Cover Installation	Comments
				North	North Pipe Length (ft)	South	South Pipe Length (ft)			
B	Sept 28, 2007	Oct 11, 2007	Oct 11 - Oct 12, 2007	NA	~25 ft horizontally	1475.41	~25 ft horizontally	Oct 26 and Oct 29, 2007	Nov 1, 2007	Manhole B was relocated nine feet south of its design location due to the interception of a storm sewer drain. 2-foot by 4-foot pieces of wood were positioned under the sewer line to prevent it from collapsing during excavation and backfilling. Soil lithology: 0-8 feet bgs - medium to coarse reddish-brown sand with gravel, cobble and stone greater than two inches in size; a layer of dark grey gravel and sand was encountered at 13 feet bgs; and from 16-20 feet bgs - soil contained more silt and less gravel and cobbles. Due to constructability issues, the 4-inch diameter HDPE piping was not wrapped in geotextile fabric to the north or south of manhole B. The guide rail system was installed in manhole B, however; the interior components – pumps, flow meters/totalizers, check valves and ball valves – were not installed. No testing or measuring of the guide rail system or pump system was conducted and/or received

Manhole	Inspection Upon Arrival	Excavation	Installation of Manhole Sections	Pipe Invert Elevation (ft.)				Guide Rail Installation	Cover Installation	Comments
				North	North Pipe Length (ft)	South	South Pipe Length (ft)			
C	Oct 4, 2007	Oct 15, 2007	Oct 15, 2007	1476.47	~25 ft horizontally	1476.592	~25 ft horizontally	Oct 30 - Oct 31, 2007	Nov 1, 2007	Soil lithology: 0-5 feet bgs - reddish-brown, medium to coarse sand with gravel, stones and occasional cobbles; at 14 feet bgs, a dark grey coarse gravel and sand layer was encountered containing cobbles greater than two inches in size; and from 14-19 feet bgs - dark grey clay material with cobbles greater than one to two inches in size. Groundwater was not encountered during excavation. Due to constructability issues, the 4-inch diameter HDPE piping was not wrapped in geotextile fabric to the north or south of manhole C. The guide rail system was installed in manhole C, however; the interior components – pumps, flow meters/totalizers, check valves and ball valves – were not installed. No testing or measuring of the guide rail system or pump system was conducted and/or received
D	Oct 16, 2007	Oct 16, 2007		1481.15	~25 ft horizontally	1481.08	~25 ft horizontally	Oct 31, 2007	Nov 2, 2007	Soil lithology: 0-7 feet bgs - reddish -brown/black coarse sand and gravel mixed with stones and cobbles greater than one inch in size; 7-15 feet bgs - coarse gravel was still visible, with some silty sand and stones and cobbles greater than two inches in size. Groundwater was encountered approximately 12 feet bgs. Due to constructability issues, the 4-inch diameter HDPE piping was not wrapped in geotextile fabric to the north or south of manhole D.

Manhole	Inspection Upon Arrival	Excavation	Installation of Manhole Sections	Pipe Invert Elevation (ft.)				Guide Rail Installation	Cover Installation	Comments
				North	North Pipe Length (ft)	South	South Pipe Length (ft)			
D (cont)	Oct 16, 2007	Oct 16, 2007		1481.15	~25 ft horizontally	1481.08	~25 ft horizontally	Oct 31, 2007	Nov 2, 2007	The guide rail system was installed in manhole D, however; the interior components – pumps, flow meters/totalizers, check valves and ball valves – were not installed. No testing or measuring of the guide rail system or pump system was conducted and/or received
E	Oct 16 and Oct 18, 2007	Oct 18, 2007	Oct 18 and Oct 29, 2007	1481.47	~25 ft horizontally	1481.69	~25 ft horizontally	Not Installed	Nov 2, 2007	Soil lithology: 0-10 feet bgs - reddish-brown, medium to coarse sand and silt, with gravel, stones and cobbles greater than one inch in size; a layer of gravel and groundwater was encountered approximately 11 feet bgs; and, 11-17 feet bgs - dark grey gravel containing silty sand and stones greater than two inches in size. Due to constructability issues, the 4-inch diameter HDPE piping was not wrapped in geotextile fabric to the north or south of manhole E. After the manhole was cleared of excess stone and silt on October 29, 2007, approximately 346 cubic feet of groundwater infiltrated back into the manhole. The guide rail system was not installed, as well as the interior components – pumps, flow meters/totalizers, check valves and ball valves.
F	Oct 24 and Oct 30, 2007	Oct 24, 2007	Oct 24 and Oct 30, 2007	1481.55	~25 ft horizontally	1481.44	~25 ft horizontally	Oct 31 - Nov 1, 2007	Nov 1, 2007	Soil lithology: 0-3 feet bgs - reddish-brown, medium to coarse sand with gravel, cobbles and stones; 3-6 feet bgs - dark grey layer of silty sand and gravel; 6-12 feet bgs - grey to reddish-brown, medium to coarse sand and gravel, with some silt and cobbles, and 12-bottom of trench - dark grey gravel, with some silty sands and cobbles greater than two inches in size.

Manhole	Inspection Upon Arrival	Excavation	Installation of Manhole Sections	Pipe Invert Elevation (ft.)				Guide Rail Installation	Cover Installation	Comments
				North	North Pipe Length (ft)	South	South Pipe Length (ft)			
F (cont)	Oct 24 and Oct 30, 2007	Oct 24, 2007	Oct 24 and Oct 30, 2007	1481.55	~25 ft horizontally	1481.44	~25 ft horizontally	Oct 31 - Nov 1, 2007	Nov 1, 2007	The guide rail system was installed in manhole F, however; the interior components – pumps, flow meters/totalizers, check valves and ball valves – were not installed. No testing or measuring of the guide rail system or pump system was conducted and/or received.
										Due to constructability issues, the 4-inch diameter HDPE piping was not wrapped in geotextile fabric to the north or south of manhole F.
										The interior steps of Section 1 and Section 2 of manhole F were installed approximately 180° apart from one another.
G	Oct 24 and Oct 30, 2007	Oct 24, 2007	Oct 25 and Oct 30, 2007	1480.97	~25 ft horizontally	1481.07	~25 ft horizontally	Nov 2, 2007	Nov 7, 2007	Section 1 arrived without interior steps mounted in place.
										Excavation of Manhole G area was kept to a minimum due to the close proximity of the National Fuel Gas Line.
										Soil lithology: 0-4 feet bgs - reddish-brown, medium to coarse sand with some gravel, stones and cobbles; 4-8 feet bgs - dark grey, coarse gravel and reddish-brown sand with some stones and cobbles greater than one inch in size; 8-bottom of trench - dark grey/black gravel containing silty sands, cobbles and stones greater than two inches in size. Groundwater was encountered approximately 9 feet bgs.
										Due to constructability issues, the 4-inch diameter HDPE piping was not wrapped in geotextile fabric to the north or south of manhole G.
										The guide rail system was installed in manhole G, however; the interior components – pumps, flow meters/totalizers, check valves and ball valves – were not installed. No testing or measuring of the guide rail system or pump system was conducted and/or received.

Manhole	Inspection Upon Arrival	Excavation	Installation of Manhole Sections	Pipe Invert Elevation (ft.)				Guide Rail Installation	Cover Installation	Comments
				North	North Pipe Length (ft)	South	South Pipe Length (ft)			
G (cont)	Oct 24 and Oct 30, 2007	Oct 24, 2007	Oct 25 and Oct 30, 2007	1480.97	~25 ft horizontally	1481.07	~25 ft horizontally	Nov 2, 2007	Nov 7, 2007	The interior steps of Section 3 were removed due to their improper orientation in relation to the underlying manhole sections.
H		Aug 13, 2007	Aug 23 and Nov 2, 2007	1481.81	~20-feet horizontally and ~5 feet upward on a 45 degree angle	1482.57	~25 ft horizontally	Not Installed	Nov 7, 2007	A 15-foot long, 10-foot diameter steel pipe was proposed to be used to assist in the installation of the manhole. The steel pipe was placed in the excavation around the manhole location, preventing groundwater from infiltrating from the sides of the excavation while the lower sections of the manhole were set in place. The 11-foot diameter corrugated HDPE ring, included in the original design, could not be used due to the space constraint between the steel pipe and the manhole. Straight sections of perforated HDPE pipe were substituted for the 11-foot HDPE ring and designed to run horizontally approximately 20 to 30 feet north and south of manhole H (within the trench gravel backfill) and then slope upwards on a 45 degree angle. Due to constructability issues, the 4-inch diameter HDPE piping was not wrapped in geotextile fabric to the north or south of manhole H. The guide rail system was not installed due to the continuous infiltration of groundwater, as well as the interior components – pumps, flow meters/totalizers, check valves and ball valves. To limit the dewatering of subsequent manholes, the remaining manholes were constructed to included a higher base piece (5 ½') and a higher section piece (6') – about a foot larger than the dimensions of manhole H.

Nature's Way was contracted by Compass to install piezometers within the gravel fill of the infiltration trench. Nature's Way began installing piezometers on November 6, 2007. Piezometers 1 to 3 (PZ-1, PZ-2 and PZ-3) were installed before drilling ceased for the day. The completion depths of PZ-1 and PZ-3 were approximately 0.2 and 0.4 short of the design completion depths respectively (see **Table 5**).

Piezometers 4, 5, 6, and 7 (PZ-4, PZ-5, PZ-6, and PZ-7) were installed on November 7, 2007 along the infiltration trench. Piezometer 8 (PZ-8), located in the middle of the haul road between manhole G and manhole H, was relocated south of the haul road. The remaining two piezometers – PZ-8 and PZ-9 – were installed on November 8, 2007. (Construction of PZ-9 began on November 7 and was completed on November 8, 2007.) On November 9, concrete surface pads were installed around PZ-9, PZ-8, PZ-7, PZ-6, PZ-4, and PZ-3; PZ-5 could not be located. Nature's Way returned on November 12 to re-drill PZ-5. Concrete surface pads were constructed for the remaining wells and groundwater was purged from all nine wells on November 13 for development (Appendix C: Submittal 85, November 13, 2007).

TABLE 5: FORMER SINCLAIR REFINERY
PIEZOMETER LOG

Piezometer ID	Date Drilled	Approximate Location	Total Drilled Depth (ft)	Design Completion Depth (ft)	Actual Completion Depth (ft)	+/-	Depth To Gravel (ft)	Anticipated GW Elevation (ft)	Actual GW Elevation (ft)
PZ-1	11/6/07	31+00	20	19	18.8	-0.2	10	1485	1483.9
PZ-2	11/6/07	28+00	20.2	19.5	20.1	0.6	10	1485	1483.2
PZ-3	11/6/07	24+00	20	19.5	19.1	-0.4	10	1485	1482.7
PZ-4	11/7/07	20+00	20	16.5	20.4	3.9	10.5	1485	1485.7
PZ-5	11/12/07	16+00	20	16	17.9	1.9	7.5	1485	1486.7
PZ-6	11/7/07	12+00	20	17	19.9	2.9	10	1486	1488.4
PZ-7	11/7/07	8+00	20.5	16.5	20	3.5	10	1487.5	1489.9
PZ-8	11/8/07	4+00	20	17	18.4	1.4	11	1489.5	1491.6
PZ-9	11/8/07	1+00	20	18	19.7	1.7	10	1491	1492.9

2.4 HDPE Conveyance Piping

Fusing of the HDPE conveyance system began on August 9, 2007, with the construction of the first leg of piping – from the vicinity of manhole H towards the Water Treatment Building. By August 22, three conveyance pipes were formed and fused together leading towards manhole A; however, the pipes were only fused 100 feet south of manhole B, approximately 500 feet shy of manhole A.

From August 22 to August 24, formation of the south HDPE conveyance system (from the vicinity of manhole H towards the sedimentation pond) began. Construction temporarily ceased until September 7, allowing Compass to focus efforts on the installation of manhole H. All three HDPE pipes were formed and fused together by September 12, 2007; approximately 100 feet shy of the northeast corner of the sedimentation pond.

Compass monitored the temperature and pressure of each section of pipe being welded. In addition, SECOR QA personnel routinely observed the temperature and pressure of the process throughout the installation of the HDPE conveyance. The temperature and pressure of the welding process met the design requirements and the manufacturer's requirements.

Prior to completing construction for the year, the utility corridor was backfilled with pipe embedment in preparation for the placement of the HDPE conveyance pipes; however, the HDPE conveyance system was not placed in the excavation. In addition, the pipes were not tested in accordance with the specifications. The pipes were capped on November 12, 2007. Completion of the pipe conveyance system will require that cleanouts are installed in accordance with the design documents. In addition, all HDPE piping must be tested in accordance with the design documents.

3.0 SUMMARY

A 3,200-foot infiltration trench was constructed from the northern portion of the site (adjacent to Current Controls at Station 32+00), south towards the vicinity of the VFW, Station 0+00. The infiltration trench was constructed in substantial compliance with the design documents except for the trench relocation in the vicinity of Manhole A **(Table 3)** and the extent of the northern section of the trench; deviations in trench depths and gravel depths **(Table 1)**; and deviations in compaction criteria and lift placement **(Table 3)**.

Manholes A thru H were installed in relative compliance to the design except for the pipe invert elevations (**Table 2**); and the configuration of corrugated HDPE collection piping In addition, the internal components (pumps, level switches, etc.) of the manholes were not constructed during the 2007 construction effort. Groundwater removed during the excavation of manhole H was treated onsite and discharged through the existing wastewater treatment system.

The HDPE conveyance piping was fused from approximately 100 feet south of manhole B (about 500 feet shy of manhole A) to approximately 100 feet north of the northeast corner of the sedimentation pond. The temperature and pressure of the welding process was monitored in accordance with the design requirements but the pipes were not tested in accordance to the specifications.

The sedimentation pond was constructed to meet the requirements of the design document. The 6-inch diameter HDPE pipes placed within the pond were not pressure tested in accordance with the specifications. In addition, the soils in the northern most portion of the pond were not compaction tested as required by the specifications. Finally, the observation deck was not installed in the sedimentation pond.

The rough excavation of the surface flow wetlands (SFW) cells 1, 2, 3 and 4 was completed within the 2007 construction season; the berm has yet to be constructed. Consequently, the HDPE liner and piping were not installed in or to the SFW. Final grades were not provided by

Compass to demonstrate that the excavations meet the design requirements and satisfactory compaction testing results were not provided.

The construction of the vertical flow wetlands (VFW) generally followed the design except for the final lift of soil, lift 8 (1505.5 feet msl). This lift of soil was not added to the VFW during this phase of construction. The HDPE liner was not installed in the five cells. No piping was completed in or to the VFW. Final grades were not provided by Compass to demonstrate that the excavations meet the design requirements.

Soils excavated from the sedimentation pond, SFW and infiltration trench were used to form the VFW berm and backfill along the trench or stored onsite at the soil staging area to be used for future construction activities.

4.0 ENGINEER'S CERTIFICATION

The remedial construction work completed in the 2007 construction effort and documented in this report meet the requirements of the Phase II-1 remedial design except as noted and documented. This certification covers only those Phase II-1 components implemented in 2007.

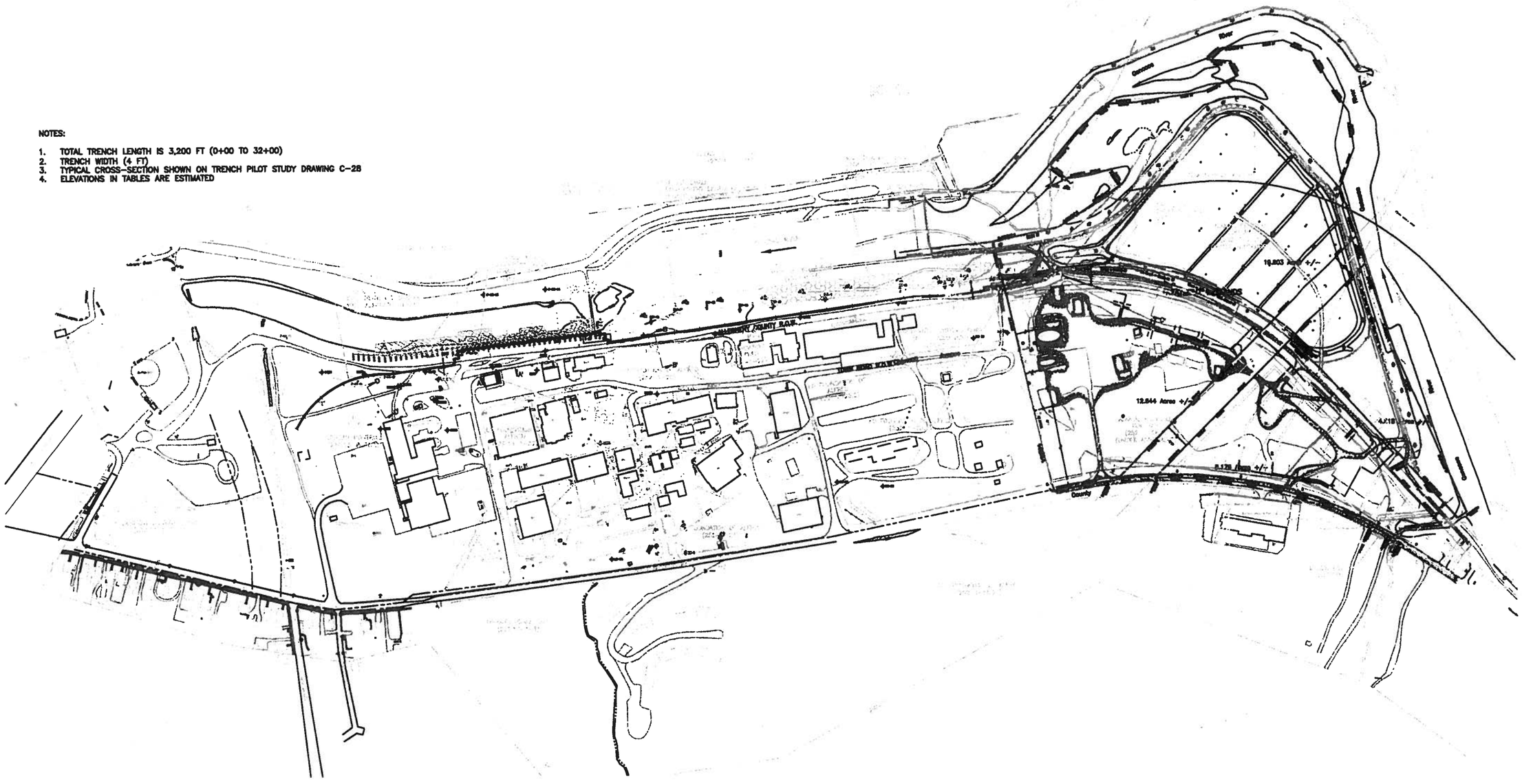
Jeremy Rasmussen
New York P.E. #082583-1

FIGURES

Figure 1 – Former Sinclair Refinery Site
Phase II-1 Design Drawings

NOTES:

1. TOTAL TRENCH LENGTH IS 3,200 FT (0+00 TO 32+00)
2. TRENCH WIDTH (4 FT)
3. TYPICAL CROSS-SECTION SHOWN ON TRENCH PILOT STUDY DRAWING C-28
4. ELEVATIONS IN TABLES ARE ESTIMATED



LEGEND

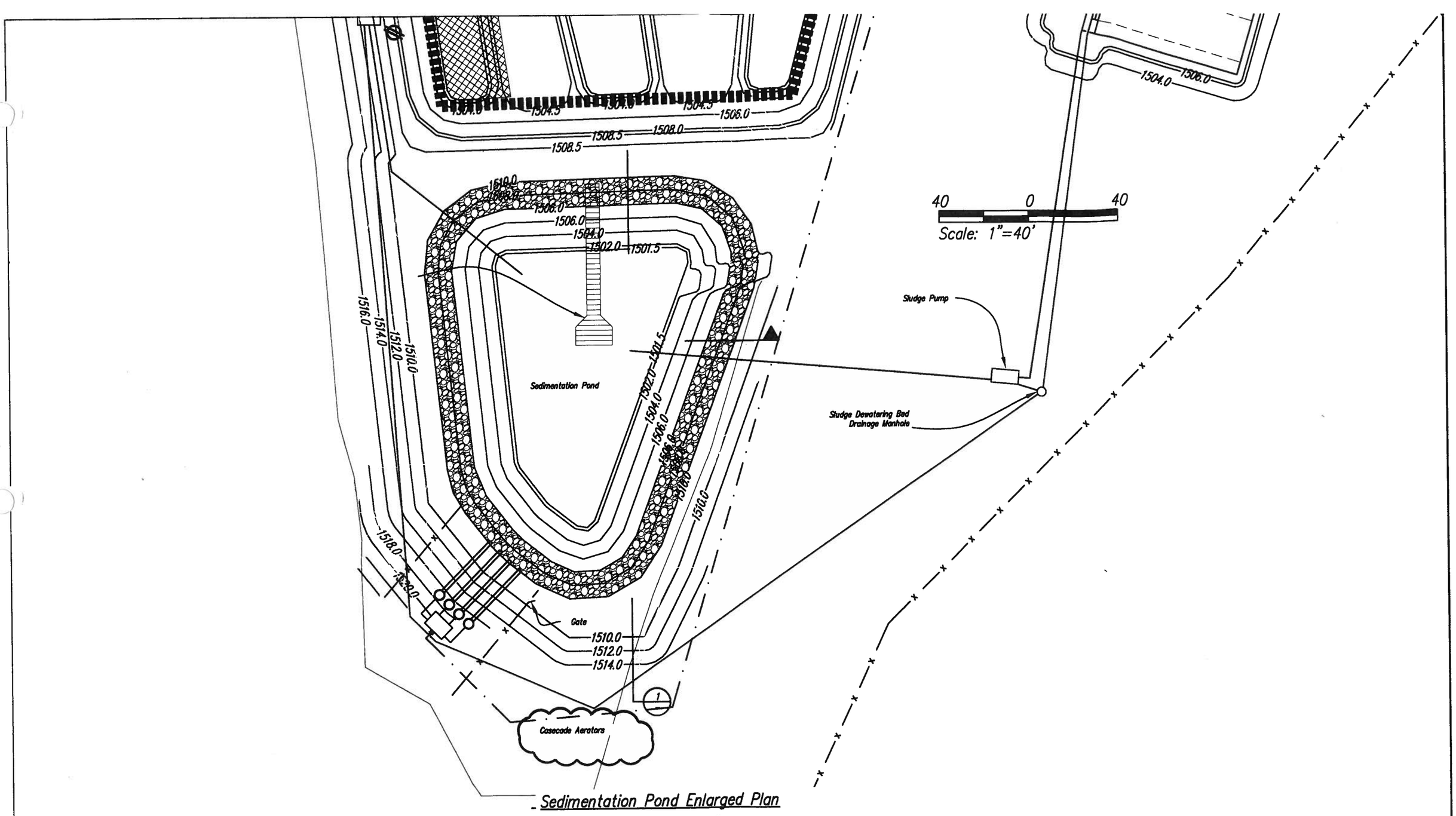
SECOR
993 LENOX DRIVE, SUITE 200
LAWRENCEVILLE, NEW JERSEY
PHONE:(609) 844-7524 FAX:(609) 844-7527

FILEPATH: WELLSVILLE, NY

FOR:				FIGURE:
ATLANTIC RICHFIELD COMPANY WELLSVILE, NY		FORMER SINCLAIR REFINERY SITE PHASE II-1 DESIGN DRAWING		1
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE: 05/14/2008

C-11A.DWG

Figure 2 –Sedimentation Pond
Phase II-1 Design Drawings
Former Sinclair Refinery



Sedimentation Pond Enlarged Plan

SECOR
993 LENOX DRIVE, SUITE 200
LAWRENCEVILLE, NEW JERSEY
PHONE: (609) 844-7524 FAX: (609) 844-7527

FILEPATH: WELLSVILLE, NY

FOR:				FIGURE:
ATLANTIC RICHFIELD COMPANY WELLSVILE, NY		SEDIMENTATION POND PHASE II-1 DESIGN DRAWING FORMER SINCLAIR REFINERY		2
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE: 05/14/2008

C-17.DWG

Figure 3 – Surface Flow Wetlands
Phase II-1 Design Drawings
Former Sinclair Refinery

N

60 0 60
Scale: 1"=60'

30'x130' Gabion Mattress

Surface Flow Wetland #4 (Phase II - II)

50'x60' Gabion Mattress

Surface Flow Wetland #3 (Phase II-I)

55'x60' Gabion Mattress

Surface Flow Wetland #2 (Phase II-I)

30'x110' Gabion Mattress

Surface Flow Wetland #1 (Phase II-I)

Limits of Phase II-I Construction

Hydraulic Control Structure - Typical

Hydraulic Control Splitter Structure

Surface Flow Wetland Enlarged Plan

SECOR
993 LENOX DRIVE, SUITE 200
LAWRENCEVILLE, NEW JERSEY
PHONE: (609) 844-7524 FAX: (609) 844-7527
FILEPATH: WELLSVILLE, NY

FOR: ATLANTIC RICHFIELD COMPANY WELLSVILE, NY		SURFACE FLOW WETLANDS PHASE II-1 DESIGN DRAWING FORMER SINCLAIR REFINERY		FIGURE: 3
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE: 05/14/2008

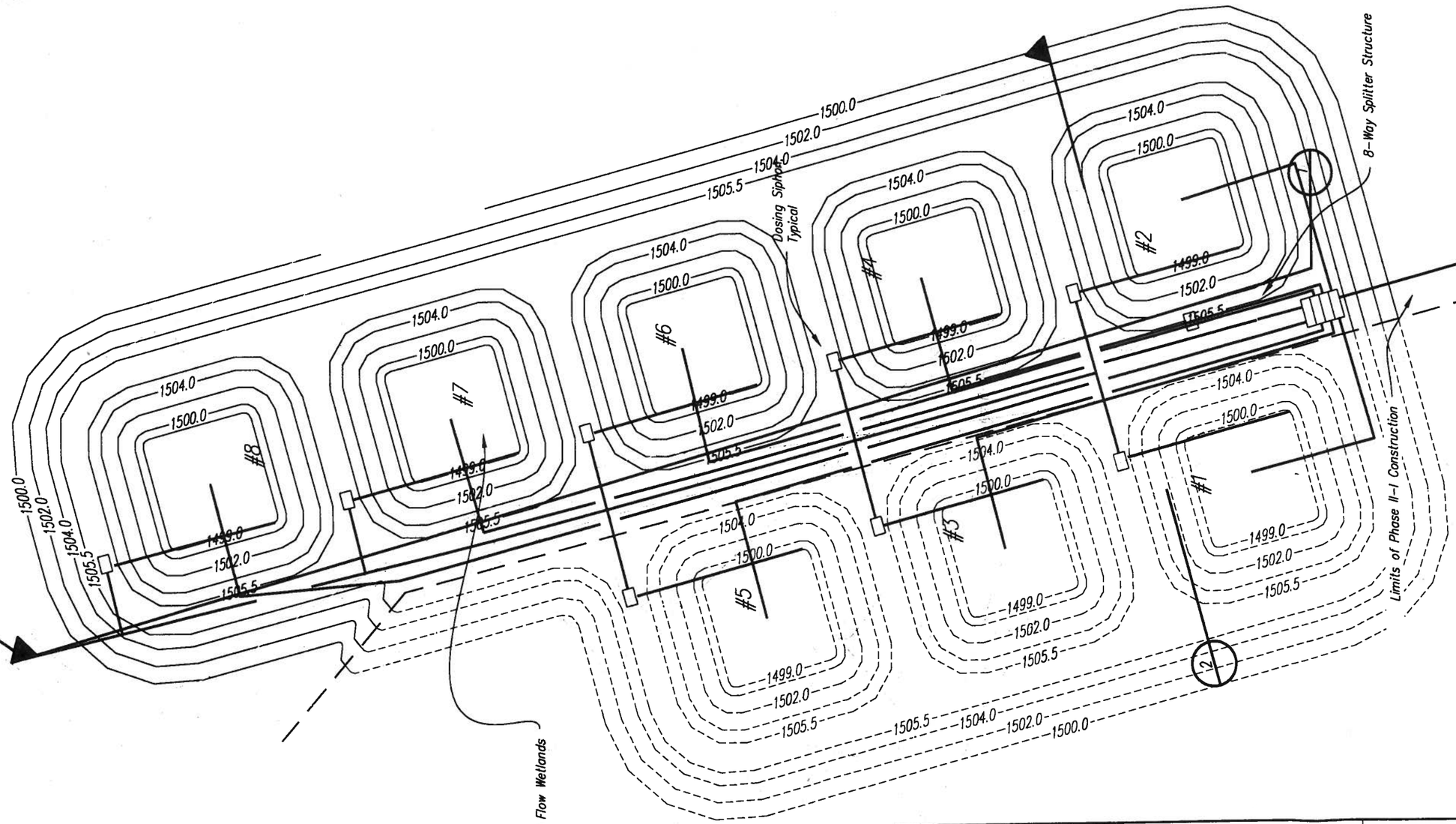
C-18.DWG

Figure 4 – Vertical Flow Wetlands
Phase II-1 Design Drawings
Former Sinclair Refinery

N

40 0 40

Scale: 1"=40'



Vertical Flow Wetland/Oxic Limestone Drain Enlarged Plan

(5 Phase II-1, 3 Phase II-II)

102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA
PHONE: (484) 875-3075 FAX: (484) 875 9286

FOR:		PHASE II-1 DESIGN DRAWING VERTICAL FLOW WETLANDS FORMER SINCLAIR REFINERY		FIGURE:
ATLANTIC RICHFIELD COMPANY WELLSVILE, NY				4
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE: 05/14/2008

APPENDICES

Appendix A – Daily Quality Assurance (QA) Reports

Daily QA Report **Monday, July 23, 2007**

Former Sinclair Refinery, Wellsville, NY

Activities Summary

First day of work for the Contractor. HHSE orientation, conducted off site from 8:00 a.m. to 3:00 pm. This was followed by site walk. All activities concluded by 5:00 p.m.

Topics covered included site specific hazards such as driving and traffic safety, poisonous plants, animals, temperature related stress, trip and fall hazards, BP policies such as work permitting, job safety analysis, the 8 golden rules of safety, and hand safety were discussed. All who attended today's training were issued stickers which are required to be displayed on their hard hat in order to enter worksite. All workers must sign in and sign out, no exceptions, and the five mile an hour speed limit must be observed. In all areas of the site outside of the parking area, PPE must be worn, which includes, at a minimum, hard hat, safety glasses, long sleeved shirt, long pants, and steel toed boots. Other PPE such as hearing protection may also be required.

Meetings

Orientation meeting and site walk.

Equipment/ materials shipped or received

Item	**Shipped/received**
Cat loader	rcv'd

Companies

SECOR Engineering, P.C., On-Site, Compass Environmental.

Construction Concerns
None noted.

Resolutions
None needed.

Date: 9/10/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily QA Report **Tuesday, July 24, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
First day of work on site by the Contractor;
Site inspection;
Wiring of the Contractor's office trailer;
Clearing and grubbing began.
Setting up of Job Safety Analyses

Equipment/ materials shipped or received

Item	Shipped/received
Walk behind trencher	rcv'd
650 John Deere bulldozer	rcv'd
Office trailer	rcv'd

Meetings
Health and safety meetings at 7:00 and 12:45.
Topics covered included: PPE requirements, muster point in case of emergency, route to the hospital, and the correct emergency number to call. It was stressed that everyone should have their BP site specific safety card with them at all times. JSA requirements were also mentioned as well. Site specific hazards discussed included pinch points, heat stress, slip trip and fall hazards due to this being an unfamiliar Site and one which has very uneven ground.

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, Reed and Culbert, and James Ball, Land Surveyor.

Construction Concerns
None noted

Design Clarifications
D1. Design clarification needed on three pipes go through flow meter structure, only one is shown going to the assembly above the flow form aerator splitter plan.

D2: Flow form aerator splitter on p. 16a of drawings shows one 6" HDPE line, Contractor noted that 3 lines, (2 live and a spare) should be included.

Submittal Concerns
S1. Silt fence cert (Product # 303600351) did not meet specification with regards to two tests: ASTM 1682 , grab elongation and ASTM G-26, UV resistance.

Resolutions

D1. Stuart Klaus noted clarification on RE drawings.

D2: The Contractor called manufacturer to correct.

S1. Exception made for G-26 by Ken Hannon, the SECOR Engineering, P.C. Project Manager, stated that if silt fence deteriorates, then the contractor will have to reinstall with no additional cost. Compass will provide specs on material so that the RE can make a determination as to whether and exception should be made for ASTM 1682.

Date: 8/7/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily QA Report **Wednesday, July 25, 2007**
Former Sinclair Refinery, Wellsville NY

Activities Summary
Work on site began at approximately 8:00, with trenching for silt fence at southern end of site, clearing/grubbing, and grading.

Work completed: trench for silt fence dug as far as locked gate at the northern end of landfill. Much of the area where the horizontal flow wetlands will be was cleared, with the exception of large trees. Fence in that area was also removed.

Equipment/ materials shipped or received

Item	**Shipped/received**

Meetings
Health and safety meetings at 7:00 a.m., and 12:45 p.m.

Visitors
Ralph Shar, Compass Environmental

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, Reed and Culbert, and James Ball, Land Surveyor.

Construction Concerns
None noted.

Design Clarifications

D1. Plan shows the detail for the prefabricated monitoring box assembly, but does not state the spacing between the pipes. The drawings from the manufacturer state an 18" spacing between them. SECOR, International Project Manager, Ken Hannon requested a 12" spacing on center.

Submittal Concerns
S1. 02115 (Erosion and sediment control measures)
Permits needed:

- Erosion and sediment control permit
- Highway permits for equipment mobilization and demobilization
- General construction permits (i.e., electrical and plumbing)
- Off site waste disposal or transportation permits.
- Utility right-of-way access.
- Utility abandonment plan.

S2. Spec #01300

a. Submittal register

b. Specific submittals:

On all of the following, the cover page of the submittal should state that the material does not meet the standard, and should state that the submittal contains a variance. These need to be resubmitted.

- Silt fence Spec. section 02115.

  Material does not meet two of the criteria. The UV variance has been approved by Ken Hannon, the grab elongation exception is under review.

- HDPE, DR 11, Spec. section: 15500A:
  - No information on the 2" pipe was included with the specifications.
  - Pipe is from a different manufacturer than called out in the specifications.

- Joint sealant , Spec. section: 03400A
  - Different part number from that called for in the specification.

- Trench Geotextile, Spec. section: 02210A
  - Different part number from that called for in the plans, and specification.

S3. Health and safety reports and subcontractor's acceptance of Health and Safety Plan.

S4. Spec. # 2055 Decontamination

- SECOR does not have a copy of the decontamination plan.

S5. Specification # 1050 Field Engineering

- No surveying of the site has been done to create control points
- No information or certs on surveyor who is to do the work.

Resolution

D1. Jerry Resnik contacted the manufacturer who has changed the spacing from 18" on center to 12".

S1. Jerry Resnik and Terry LeMasters are working on getting copies of required permits to SECOR.

S2a. Jerry Resnik is in the process of creating a submittal register.

S2b. Clarified with J. Resnik that where wording such as " ...or engineer approved equivalent" are used, Compass needs to get the approval from the SECOR Project Manager. Submittals which vary from the specifications need indicate that a variance

is requested. He agreed to resubmit the items mentioned above. A new template for the cover sheet is being created.

S3. Compass Environmental's Health and Safety officer is currently working on this issue. EPA air monitoring requirements stated in the plan give values, but no units for acceptable limits.

S4. Jerry Resnik will send SECOR a copy of the decontamination plan.

S5. Jerry will get the necessary paperwork from the surveyor.

Date: 8/7/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily QA Report **Thursday, July 26, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Work began at approximately 7:45.
Installation of silt fence: silt fence was staked from southern end of the field area, to 1/3 of the way to the locked gate at northern end of the landfill.
Clearing and grubbing continued at the southern end of the Site.
Completed: Installation of skirt on trailers and phone installation

Equipment/materials shipped or received
Item **Shipped/received**

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, Reed and Culbert, and James Ball, Land Surveyor.

Meetings
Health and Safety Meetings: 7:00 am, and 12:45 p.m. Topics discussed included ATW's and PTW's, heat related stress, spotting when reversing, heavy equipment operation, smoking areas, among other topics.

Construction kick off Meeting 10:00 am, with representatives from the village of Wellsville, NYS department of Health, and the NYS DEC.

Weekly quality control meeting, 1:30 pm
An agenda for future meetings was developed, concerns mentioned in the daily reports dated 7/24 and 7/25 were addressed.

Construction Concerns
None noted

Design Clarifications
None noted

Submittal Concerns
None noted

Resolutions
All submittal concerns were raised during the weekly Quality Control meeting. Jerry Resnik said that he will resubmit the submittals which have been not accepted. He has built a submittal register, and will send the utility abandonment plan this evening.

Date: 8/7/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily QA Report **Friday, July 27, 2007**
Former Sinclair Refinery, Wellsville, NY

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, Reed and Culbert, and James Ball, Land Surveyor.

Activities Summary
Phone installation: there are now working phones in the east, west, and security trailers. Internet access should be available to the site next week.
Limited **clearing and grubbing** was accomplished.
Installation of silt fence- the fence was staked, backfilled and compacted up to the locked gate at the northern end of the landfill. This section of the silt fence was finished at about 2:00 pm.
Surveying. Surveyor roughed out some points from elements which are shown on map. These points may change, see D1 below.

Equipment/ materials shipped or received

Item	Shipped/received
Excavator	rcv'd

Meetings
Health and Safety Meeting 7:00.
Health and safety lunch at 12:00.

Construction Concerns:
C1. Clearing and grubbing were halted at about 11 am when the bearing which holds the blade of the bulldozer was damaged.

C2. Monitoring wells in work area not flagged (marked).

C3. Concrete culvert observed, at southern end of Site. It is possibly a utility, such as a storm sewer. The cover on it is falling into the culvert because it does not fit, and is supported on rotting plywood. Adjacent to the culvert is a set of buried electrical cables, the ends of which had been cut at some time in the past, and wrapped in electrical tape.

Design Clarifications
D1. There are no reference points and the contours are incorrect in the plans given to the surveyor for a portion of the southern end of the site which has the wetlands in it.

Submittal Concerns
S1. Revisions are needed in the Utility Abandonment plan submitted by Compass because the plan submitted only covers unidentified utilities.

S2. Specifications # 1039:

QA does not have any copies of material delivery for materials which have been delivered and used, for instance, the silt fence, posts, snow fencing, or liner for the decon pad.

Resolutions

C1. Mike V. stated that the bulldozer should be repaired Monday morning, and that another bulldozer should be arriving at that time, also.

C2. Compass was reminded to flag (mark) monitoring wells in work area

C3. Culvert was documented and photographed. Mike V. said that for now, it is not in the way.

D1: CAD operator (from NAWE) is sending the correct file to the RE who will forward it to the surveyor.

S1. R.E. Stuart Klaus made Compass aware that the plan needs revision.

S2: Mentioned this on 7/26.

Date: 8/7/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily QA report **Monday, July 30, 2007**
Former Sinclair Refinery, Wellsville, NY

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, Reed and Culbert, and James Ball, Land Surveyor.

Activities Summary
Work began at 7:15.
Rolling of the substrate for the sludge pond was begun.
Soil stockpiling
Removal of some large trees.
Cutting and filling.

Equipment/materials shipped or received

Dump truck	rcv'd
Bulldozer	rcv'd
Large tool container.	rcv'd
Roller/ compactor	rcv'd

Meetings
Health and Safety Meetings at 7:00 a.m. and 1:00 p.m.

Construction Concerns
C1. The bulldozer mechanic arrived. He will need another part for the bulldozer, and will have to cut and re-weld the part onto the blade. A hot work permit will be prepared for this work tomorrow

C2. During a site walk with Joe Sontchi, he requested that the electrical wires which are visible near the culvert at the southern end of site be clearly marked, and that the electrician investigate whether this utility could potentially be energized.

Design Clarifications
D1. The stair dimensions for the flow form aerator are not specified on the plans. Also enforcement such as rebar is also not specified. Compass, which is building the aerator stairs, has requested this clarification.

D2. The surveyors were unable to open the recently sent file which shows the area of the sludge pond.

D3. Infiltration Sump Inlet piping – slotted corrugated piping – w/ geotextile wrap - is shown on the drawing is shown on the plans, but not in the specifications. The shop drawing, part of submittal #015, did not include this.

D4. Geotextile is mentioned as being installed "Beneath the utility trench" however, this does not appear in the plans. Also the material called out in the specs has not been manufactured for several years.

D5. Specifications for HDPE pipes, for the 2" and 6" diameters have interior diameters (ID's) which are a few thousandths of an inch less than called out for in the specifications.

D6. Grating thickness which is not specified on the drawing for the hydraulic control splitter appears to be 2".

D7 Certifications for liner to use instead of Trevira show that the new material is not the exact equivalent.

Submittal Concerns
S1. CQAP was missing some information, including a resume, among other items.

S2. The stone to be used for the decon pad does not meet the NYSDOT standard for size four stone.

S3. A cut sheet from the manufacturer of the splitter for the flow form aerator did not show a required four inch pipe.

S4. The Utility management plan is in need of revisions.

Resolutions
C1. A hot work permit is ready for the mechanic's arrival. A trained staff member will also be available to do a fire watch while the work is going on. The mechanic is expected on site Tuesday or Wednesday.

C2. Access to the wires and the culvert will be restricted using temp fencing. Also, a utility map from William Whitfield (Village of Wellsville) will be requested. In addition, snow fencing will be placed near the on-site fuel tank to increase visibility.

D1. RE emailed the Project Manager, Ken Hannon, asking for clarification.

D2. RE worked with them on the site, and got the image integrated into their map. When the left, they expressed that the file should now work, and they will be able to accurately survey the area.

D4. RE is reviewing the geotextile which has been submitted. Also asked for plan clarification as well.

D5. RE is reviewing.

D6. RE set it as 2" and informed the manufacturer.

S1. Will let Compass know about the missing elements of the CQAP.

S2. The certification has been forwarded to the Resident Engineer (RE), Stuart Klaus for review.

S3. The manufacturer will correct.

S4. Jerry Resnick of Compass is currently revising their utility plan.

Date: 8/7/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily QA report **Tuesday, July 31, 2007**
Former Sinclair Refinery, Wellsville NY

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, Reed and Culbert, and James Ball, Land Surveyor.

Equipment/materials shipped or received

Item	Shipped/received
Dump truck	rcv'd

Activities Summary
Work began at 7:30.
Visitors from BP are expected some time tomorrow.
Surveying of the sludge dewatering pad was completed.
Walking path was rolled.
Bulldozer repair was completed.
Electrical wire, diesel tank and culvert all marked with safety fence.

Meetings
Health and Safety Meetings at 7:00 a.m. and 12:45 p.m.

Construction Concerns
1. Dust from the dump truck reaches over two stories at times, and can be seen drifting over the landfill.

2. Observed saturated soil in the eastern corner of where the sludge pond is going to be installed. Even after soil was removed, a saturated area remained.

3. Maintenance workers who are responsible for mowing the grass on top of the landfill cut a section of the silt fence for access.

Design Clarifications
D1. Drawing C-16a detail changed. Instead of two corner irons supporting the grating, a T-bar will be used.

Submittal Concerns
None noted

Resolutions
C1. Mentioned the dust issue to Adam Calvelage, the Compass Health and Safety officer. He stated that Compass is looking into a water truck or some other method of dust control. Also mentioned this to Jennifer Menges, SECOR's Project Health and Safety Officer.

C2. Brought this to the attention of the Resident Engineer (RE) Stuart Klaus, who made note of it. Issue was resolved when the surveyors marked the actual location of the sludge dewatering pad. The area in question is outside of the boundaries of it.

C3. The silt fence will be repaired, and a section will be altered so that Onsite will be able to more easily access the gate.

D1. RE noted the change on the plan.

Date: 8/7/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily QA report
Former Sinclair Refinery, Wellsville, NY **Wednesday, August 1, 2007**

Activities Summary
Work began at 7:30.
Sludge dewatering pad partially cut and fill.
Sedimentation pond partially excavated
Sedimentation pond surveying completed
Clearing of area for vertical wetlands.
Clearing vegetation from fence near entrance for increased visibility at the entrance gate.

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, and James Ball, Land Surveyor.

Visitors

Name	Company
Patricia Gallery	BP

Equipment/ materials Shipped or received

Item	Shipped/received
Diesel fuel	rcv'd

Meetings
Health and Safety Meetings at 7:00 a.m. and 12:45 p.m.

Construction Concerns
C1. RE expressed concern about the amount of large rocks in the fill material, cobble size and larger, because of the effect rocks such as that may have on the liner.

C2. Silt fence will be replaced tomorrow and altered so that Onsite will be able to access OU1.

C3. Soil lifts are being deposited and rolled/compressed without any Proctor test results to identify maximum density/moisture content relationships. Also, there is no method to add water to soil. Spec. 02210, p. 3.9 indicates that proctor tests should be completed before compaction is begun.

C4. Power pole near sedimentation pond may have live phone lines. Also, indications that underground lines run from this pole.

Design Clarifications
None noted

Submittal Concerns
S1. Spec. # 01400 QCAP needs the following items added:

a. A copy of Mark Fleri's resume
b. A copy of the maintenance program
c. Maximum allowable levels for noise, dust, volatiles, and a plan for reducing these.
d. Qualifications of labs doing which will be doing the testing.
e. Field QC procedures, some of which are listed in 02115, p. 2.1.
f. On p. 13, change "Imported materials" to "Granular fill for Infiltration trench". This test should not be needed for the utility trench fill.

S2. SECOR does not have any copies of ASTM's for any tests that SECOR QA is required to observe.

Resolutions

C1. Alternatives were discussed, for instance, using a landscaping rake to remove 2" diameter and above sized gravel/cobbles.

C3. Brought this to the attention of the RE. After inspecting the work, he pointed out that the amount of cobble sized rock in the soil made it robust enough, regardless of moisture content, to support structures, but that in order to meet the specifications, Proctor test results may be needed.

C4. Niagara-Mohawk will be on site next week in order to remove/shut off any live utilities in that area.

S1, and S2: Will be brought to the attention of Compass Environmental.

Penelope Padmore
QA Official, SECOR Engineering, P.C.

Date: 8/7/07

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/1/07**

Report # **008**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	48	84
Precipitation		
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Excavated 900 yds from sediment pond and placed in sludge pit area.

Forecasted Work

Relocate connex box and tool trailer. Demo pole building. Grub area for pilot trench.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Heat stress	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report
Former Sinclair Refinery, Wellsville, NY

Thursday, August 2, 2007

Activities Summary
Work began about 7:30.
Clearing of vertical flow wetlands area
Cutting and filling of sedimentation pond
Demolition of one building in vertical wetlands area.
Surveying, cutting and filling of vertical wetlands area.

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, James Ball, Land Surveyor.

Visitors

Name	Company
Patricia Gallery	BP

Equipment/ materials shipped or received

Item	Shipped/received

Meetings
Health and Safety Meetings at 7:00 a.m. and 12:45 p.m.
Quality Control Meeting at 13:30.

Construction Concerns

C1: The 700 bulldozer malfunctioned at about 9:00 am and was fixed. Stopped working again about 3:00 p.m.

Design Clarifications
None noted

Submittal Concerns
All outstanding submittal concerns, and the status of approved submittals were addressed at the weekly QC meeting.

S1 A submittal is needed on the 11' radius 6" diameter corrugated pipe, to be installed around man holes.

Resolutions
C1: The mechanic is expected tomorrow.

D4, and D5, (From 7/30/07) Geotextile for infiltration was ok'd for use by the RE, as were the 6" and 2" PVC pipes.

Penelope Padmore
QA Official, SECOR Engineering, P.C.

Date: 8/7/07

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **8/2/07**

Report # **009**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	56	86
Precipitation		
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Continued excavation of sediment pond.

Forecasted Work

Continue excavation of sed pond and placement of soils on sludge ponds.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Proper rigging	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report
Former Sinclair Refinery, Wellsville, NY

Friday, August 3, 2007

Activities Summary
Cutting and filling of sedimentation pond and vertical wetlands areas
Work completed: Vertical wetlands completely surveyed.
Mechanic worked on 700 bulldozer.

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, and James Ball, Land Surveyor.

Visitors

Name	Company
Dave Crew	Niagara Mohawk

Equipment/ materials shipped or received

Item	Shipped/received

Meetings
Health and Safety Meetings at 7:00 a.m. and 12:00 p.m. The 12: 00 meeting was the H and S weekly lunch meeting.

Construction Concerns
C1. Surveyor James Ball this morning expressed concerned about the dust issue, his instruments are very sensitive, and is concerned also about breathing in the dust, Because of the amount of dust, he will have to have his survey equipment sent out and cleaned. If he does this, there is no back up piece of equipment with which to survey the Site.

C2. Two test pits were excavated west of the office trailers, to a depth of about 5 feet. The soils contained fewer rocks, however they both had a strong odor of hydrocarbons. The holes were backfilled.

C3 Further work is needed to remove utilities in the area of the sedimentation pond.

Design Clarifications
None noted.

Submittal Concerns
None noted.

Resolutions
C1: Compass is expecting to have a pull behind water tank with spreader on Monday.
C2: PM was notified.
C3: A work crew from Niagara-Mohawk will be scheduled Monday or Tuesday to remove.

Date: 8/7/07

Penelope Padmore
QA Official,
SECOR, Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/3/07**

Report # **010**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	55	88
Precipitation		
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Continued excavation of sediment pond and transported to sludge ponds. Excavated 1050 yds of soil.

Forecasted Work

Continue excavation of sed pond.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Equipment inspections	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report **Monday, August 6, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Cutting and filling of sedimentation pond and vertical wetlands areas

Companies Present
SECOR International, Inc., On-Site, Compass Environmental, and James Ball, Land Surveyor, ECW

Visitors

Name	Company

Equipment/ materials shipped or received

Item	Shipped/received
6" diameter pipes.	rcv'd
Yamaha 4 x 4	rcv'd

Meetings
Health and Safety Meetings at 7:00 a.m. and 12:45 p.m.

Construction Concerns
C1. Soil stock pile is partially on top of easement, under power lines, and needs to be moved.

C2. Saturated soil at the bottom of the sedimentation pond is visible in tire tracks of dump trucks. About 4 to 4.5 more feet of soil needs to be evacuated from the bottom of the pond.

C3. Pockets of impacted soil are now visible and can be detected by their odor where the sedimentation pond is being excavated.

C4. Delivery of 6" pipes did not have any information about the specific lots having been tested by the manufacturer, and as of yet, are not approved.

Design Clarifications
D1: Specification 2210 calling for geotextile beneath the utility trench is deleted.

D2: New drawings from NAWE show the cascade aerator stair structure with an added toe wall, as well as a 10^{th} row of basins.

Submittal Concerns
None noted.

Resolutions

C1. Mike is aware and will move the soil.

C2. RE is monitoring. Informed Project Manager.

C3. Compass is now monitoring the work area with an FID. Soil contamination was also mentioned in the H and S meetings.

C4. Spoke to Terry McMasters, and explained the certification which is required.

D1 and D2: RE informed Project Manager.

Date: 8/13/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: 8/6/07

Report # 011

Project # 22070706R

Weather		
	Daily Low	Daily High
Average Temp.	65	88
Precipitation		
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Continued excavation of sediment pond and transported soils to sludge ponds.

Forecasted Work

Continue excavation of sed pond.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Proper lifting	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Trench Geotextile	ACF Environmental	900 ft	

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report **Tuesday, August 7, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Cutting and filling of sedimentation pond and vertical wetlands areas
Surveying of trench area.

Work completed:

Companies Present
SECOR International, Inc., On-Site, Compass Environmental, and James Ball, Land Surveyor, ECW

Visitors
Name **Company**

Equipment/ materials shipped or received
Item **Shipped/received**

Meetings
Health and Safety Meetings at 7:00 a.m. and 12:45 p.m.

Construction Concerns
C1. Silt fence has not been repaired.
C2. Rainfall in the afternoon has caused concern over compaction on the vertical wetland cells. Further evaluation in the morning is needed.

Design Clarifications
None noted

Submittal Concerns
S1: Submittal # 014, Utility Abandonment plan: RE requested that this be added to it:
"Procedures outlined in the SERP will be followed for spill notification and response. Detailed information is also available in the site HASP."

S2: Submittal # 24 Spec # 15061A:

- The panels are not from one of the named manufacturer. Needs engineer approval.
- The panels are not listed as meeting UL 508A or UL 698A standards.
- The pump and rail system meet the specs, but additional items are needed. They include:
  - Setting drawings w/templates
  - Directions for installing, including foundation and anchor bolts and other anchorages.

  - Wiring diagrams which include detailed wiring for power, signal and control systems, differentiating between manufacturer installed and field installed wiring.
  - Manufacturer's installation guide
  - Maintenance data
- Manhole flow meter is also needed

S3: Submittal #'s 009 and #012: RE requested that a notation on the cover sheet indicate that Compass is no longer asking for an exception to the chemical testing requirement.

S4: Cover sheets for submittals contain the comment: The specification requirement for installation instructions is N/A, which needs clarification.

The cover sheets for the latest submittals also say that each one is a resubmittal of 013.

Resolutions
C1. Will let Compass know.
C2: Needs to be evaluated first thing in the morning.
Submittal concerns: Brought them to the attention of Terry McMasters and Jerry Resnick at Compass.

Date: 8/13/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/7/07**

Report # **012**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	69	89
Precipitation		
Dom. wind direction	W	
Forecast: Rain		

Work Performed and Production Rates

Continued excavation of sediment pond and transported soils to sludge ponds.

Forecasted Work

Continue excavation of sed pond.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Severe weather	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report **Wednesday, August 8, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Cutting and filling of sedimentation pond and vertical wetlands areas
Surveying of trench area

Work completed:

Companies Present
SECOR International, Inc., On-Site, Compass Environmental, and James Ball, Land Surveyor, ECW

Visitors

Name	Company

Equipment/ materials shipped or received

Item	Shipped/received
Excavator	rcv'd
Rugs for trailers	rcv'd
Safety equipment	rcv'd
Fencing	rcv'd
Pipe welding machine	rcv'd
Geotextile for trench	rcv'd

Meetings
Health and Safety Meetings at 7:00 a.m. and 12:45 p.m.

Construction Concerns
C1. A Compass employee was helping to remove debris from the demolished building. A nail punctured the sole of his boot, piercing his foot.

C2. Clear water in the bottom of the sedimentation pond is possible groundwater infiltration.

Design Clarifications
The flow form aerator design should have 9 steps, and a toe wall. The correct version of the design drawing was sent out.
Drawing #C12-A, the guide rails have a center support, which is not specified in the drawing.

Submittal Concerns
S1: Submittal 025. The aggregate backfill contains higher than allowable levels of manganese and copper. All other quantities for all three samples are within specification.

SECOR does not have any qualifications for this laboratory, however. The recovery on their spiked samples for organic components ranges from 40% to 163%.

Received, so far, with no submittals:
Resumes and NY license of James Ball Surveying.
Testing results, lot
Special hauling license, State of New York.

Resolutions
C1. First aid was given, and the appropriate notifications were done.
C2: Will monitor the water entering the pond by both rainfall and infiltration. If water remains during clay placement and/or liner placement, removal will be required.

C2 (from 8/7/07) Soil was too wet in the morning to compact. Some of the saturated material was removed from the vertical flow beds, and the soil was given additional time to dry. Excavated soil from the sedimentation pond, to be used for building up of berms for the vertical flow wetlands was stockpiled near the area, and allowed to dry.
Submittal # Liner is approved, and new drawings from NAWE are approved.

Date: 8/13/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/8/07**

Report # **013**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	69	89
Precipitation		
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Continued excavation of sediment pond and transported soils to sludge ponds.

Forecasted Work

Continue excavation of sed pond and transport soils to sludge pond. Begin welding of pipe.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Watch your footing	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	8/6/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer		

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments
2 pumps	8/8/07		

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report **Thursday, August 9, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Cutting and filling of sedimentation pond and vertical wetlands areas
Surveying of trench area.

Work completed: Sedimentation pond is excavated.

Companies Present
SECOR International, Inc., On-Site, Compass Environmental, and James Ball, Land Surveyor, ECW

Visitors

Name	**Company**

Equipment/ materials shipped or received

Item	**Shipped/received**
Pumps	rcv'd

Meetings
Health and Safety Meetings at 7:00 a.m. and 12:45 p.m. Focus for p.m. meeting was on stop work authority, and proper review of incidents.
Weekly Quality Assurance Meeting 13:42 to 14:29

Construction Concerns
C1. Safety- Stop work authority was used when SECOR employees noticed that pipe wielding was going on at the foot of an unstable pile of pipes, with heat sources in an area of high weeds, and also workers were attempting to carry more than 100 lbs. The situation was stabilized by moving the pipe, and re-piling it so that it was stable, clearing the area, and getting enough people on the task so that no one had to lift more than 50 lbs.

C2: While fusing pipe, the generator failed a few times, once when two pipes were being pressed together. On the second connection, the clamps which hold the pipe while the machine presses the two pipe ends together was not tightened sufficiently, and slid across the seam.

More rolling of lifts need to be done

C2. Work will begin at 6:30 tomorrow morning.

Design Clarifications

Submittal Concerns
Resolutions

Penelope Padmore Date: 8/13/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: 8/9/07

Report # 014

Project # 22070706R

Weather		
	Daily Low	Daily High
Average Temp.	70	87
Precipitation		
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Continued excavation of sediment pond and transported soils to sludge ponds.

Forecasted Work

Continue excavation of sed pond and transport soils to sludge pond. Continue welding pipe.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Clean working areas	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	8/6/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer		

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report **Thursday, August 10, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Cutting and filling of sedimentation pond.
Surveying
Receiving, testing of aggregate
Niagara-Mohawk removed transformer and electric line near the sedimentation pond.
Fusing pipe
Internet is working in the office.

Companies Present
SECOR International, Inc., On-Site, Compass Environmental, and James Ball, Land Surveyor, Niagara-Mohawk.

Visitors

Name	**Company**

Equipment/ materials

Item	**Shipped/received**	**Tests:**
12 deliveries aggregate	rcv'd	Jar test – all passed
Bob cat	rcv'd	no
Manhole H (3 parts)	rcv'd – damaged	no
Meter box	rcv'd	no

Meetings
Health and Safety Meetings at 6:30 a.m. and at 12:00 p.m.

Construction Concerns
C1. Soil was saturated in the morning.
C2. The lowermost ring of Manhole H was damaged during shipping. A large chunk, weighing about 15 pounds broke off. Joe Sontchi and Stuart Klaus approved of field repair by Compass.

Design Clarifications
D1. The location of the sludge dewatering pump structure and the sludge dewatering drainage were adjusted in order to place inside fence boundaries. The pump is at a slightly lower elevation.
D2. With both a 4" floor drain on the sludge pump to the sludge dewatering bed drainage lift station, and a 6" line from the sludge drying beds, a check valve is needed in the floor drain between the sludge dewatering pump structure and the sludge dewatering bed drainage lift station to prevent flooding of the sludge dewatering pump structure in the event of a pump failure.

Submittal Concerns
None noted.

Resolutions

C1 Soil fill on vertical wetlands was reworked using dozer in order to facilitate drying.

C2 Compass repaired manhole with rebar and concrete.

D1 Noted on plans

Date: 8/15/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/10/07**

Report # **015**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	66	85
Precipitation	Rain overnight-wet soils	
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Completed subgrade of sediment pond, continued welding pipe.

Forecasted Work

Continue welding pipe, clear and grub in southern area of footprint. Working soil to dry it in the vertical wetlands berms.

Field Discrepancies

Bottom section of manhole damaged upon receipt, Stuart approved Compass to make necessary repairs by adding rebar and new concrete.

Ken H. waived the jar test for the utility bedding trench. But not for the infiltration trench.

Meetings

Topic	Companies Represented	Description
Hot work surfaces	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Material Deliveries**			
Material type	Vendor	Quantity	Purpose
Manhole	Wieser concrete	3 sections	
Splitter box	Wieser concrete	1	
Infiltration stone	Buffalo crushed	12 loads (434 tons)	Infiltration stone/pipe bedding

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report **Monday, August 13, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Grubbing and clearing of horizontal flow wetlands
Digging of the pilot trench
Installation of manhole H
Fusing pipe

Companies Present
SECOR International, Inc., On-Site, Compass Environmental, and James Ball, Land Surveyor.

Visitors

Name	Company
Khaled Al-Akhras	Camp, Dresser and McKee

Equipment/ materials

Item	Shipped/received	Tests:
Trench Boxes	recv'd	No

Meetings
Health and Safety Meetings at 6:30 a.m. and at 12:45 p.m.

Safety
Sf1: Large open area excavation, with fifteen foot high sides needed to be marked with fence. Area was demarcated at the end of the day.

Sf2: Trained confined space entry rescue person needs to have current first aid and CPR certification. None of the people working for Compass who are confined space rescue trained have current first aid and CPR.

Sf3: In order to install the manhole or to work in the trench, a working at heights permit is needed along with the confined space entry permits, because of the risk associated with climbing the ladders. The working at heights permits are also required when workers are near the edge of an excavation into which they could fall, if the excavation is more than 6' deep. There was no working at heights permits granted today, because there was no adequate fall arrest system.

Construction Concerns
C1: While beginning trench and manhole installation, impacted soil was encountered. Readings with PID and FID were below detectable limits, although there was a nuisance smell. The operation was changed slightly, and the excavated fill was deposited on a plastic liner.

C3: The fencing contractor called, needing "better pictures of the site" to install fence.

Design Clarifications

D1: When the manhole is installed, it is imperative that the inlet be at the elevation of ~~1452'~~. 1452 ✓

Submittal Concerns

Specification # 03400A Clarification needed on submittal # 026: Precast outlet structure

- ☐ The drawings specify O rings ASTM C-443. O- rings are not checked on the list on Weiser's cut sheet.
- ☐ Weiser shows a double wall with a 5" total thickness
- ☐ The drawing needs to specify that the L bracket has a thickness of 3/16".
- ☐ Need more clarification on the 16M boots

Specification # 03400A Clarification needed on submittal # 021: Hydraulic control splitter

- ☐ L bracket needs to be 3/16" inch thick
- ☐ Three chambers should be 36", they are 36 3/8, 35 ¾ and 36 1/8.
- ☐ The centers of the pipes should be 18 inches from the wall, not 16," in order for them to be exactly in the center of the chambers, as shown in the drawings by NAWE.
- ☐ The weir openings have stainless steel weir plates.
- ☐ The two drawings which show the opening for the 10" pipe which comes from the sedimentation pond show a 10" opening. Since the pipe is 10" (Interior diameter?) would this would make the opening too small? Also, there needs to be room for a link seal or engineer approved equivalent.
- ☐ Weiser needs to know what kind of pipe material to cast into walls for the 4" pipe openings.

Submittals Received

026 Atlantic Testing Laboratory Accreditation Certificates
027 ATL Statement of qualifications.

Resolutions

Sf2: They are looking into the possibility of having the Red Cross come on site and teach a class.

Penelope Padmore Date: 8/15/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/13/07**

Report # **016**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	56	83
Precipitation	Rain overnight-wet soils	
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Welding HDPE pipe, excavating for manhole. Constructed temporary fence around manhole excavation. Clearing and grubbing of the wetlands area.

Forecasted Work

Continue welding pipe, continue to clear and grub in southern area of footprint.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Confined space	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report **Tuesday, August 14, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Grubbing and clearing of horizontal flow wetlands
Digging of the pilot trench
Fusing pipe
.

Companies Present
SECOR International, Inc., On-Site, Compass Environmental, and James Ball, Land Surveyor, Verizon.

Visitors

Name	Company
Khaled Al-Akhras	Camp, Dresser and McKee
Mike Nerellis	EPA
Maurice Moore	NYSDEC
Carol Burns	EPA

Meetings
Health and Safety Meetings at 6:30 a.m. and at 12:45 p.m.
Confined space rescue training and meeting at 2:00.

Safety
Sf1: A confined space rescue meeting/training was held.

Construction Concerns
C1: None noted
C2: Jar test has changed. Compass will alert SECOR that a load of material has arrived, and prior to unloading any materials. SECOR will witness jar tests.

Design Clarifications
D1: Project Manager Ken Hannon has asked Atlantic Richfield BP to review the requirements for limits in soils, found in 02210, p 3-4 to another standard, Title 6, Part 375, Subpart 6, Section 8, (b), state of New York State, because the parameters in the specifications are intended for sediment, not soil. EPA approved the change

Received today:
Revised daily QC report for 8/10
Daily QC for 8/13
Submittal 29: Corrugated polyethelene pipe
Subittal 30: HDPE pipe quality cert
Information on STL (laboratory)

Chemical data on clay liner

Submittal Concerns

S1: Laboratory data for the clay liner is incomplete for the following reasons:

- This is not the laboratory we have certification and qualifications for. The data is from STL in Buffalo. The qualifications are for Atlantic Testing Laboratory. We have incomplete qualifications for STL.

☐ There is no chain of custody

☐ There is no QA documentation.

Resolutions

D1: BP and EPA agree to change the requirements as stated above.

Date: 8/15/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/14/07**

Report # **017**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	56	83
Precipitation		
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Welding HDPE pipe, clearing and grubbing of wetlands area. Conducted simulated confined space emergency response.

Forecasted Work

Continue welding pipe, dig for manhole H and set trench box.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Fall protection	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report **Wednesday, August 15, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Installing manhole H
Digging of the pilot trench
Fusing pipe
Installing fence near Site entrance
Dewatering manhole H

Companies Present
SECOR International, Inc., On-Site, Compass Environmental, and SSS Fencing

Visitors

Name	**Company**
Khaled Al-Akhras	Camp, Dresser and McKee

Equipment/ materials

Item	**Shipped/received**	**Tests:**
Material for liner subgrade	rcv'd	Certs rcv'd
Silt fencing	rcv'd	none
Geotextile wrapped corrugated pipe	rcv'd	

Meetings
Health and Safety Meetings at 6:30 a.m. and at 12:45 p.m.

Construction Concerns
C1: None noted

Design Clarifications
(comments from email sent by Stuart Klaus) see attachment!

Received today:
Received: Submittal 031 Cascade Aerator

Submittal Concerns
Draft of Master list created, with status of all required test, certifications, and submittals.

Resolutions
Notice from Ken Hannon that the soil analytes and levels have been changed to the NY state standard (see daily QA report dated 8/14/07)

Joe Sontchi wanted to see results for all of the analytes listed in the standard, so the data sheet was returned to Compass for them to notify the laboratory that additional data are needed.

Date: 8/17/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Stephanie Andrews

From: Stuart Klaus
Sent: Wednesday, August 15, 2007 12:35 PM
To: Ken Hannon; Stephanie Andrews; Srinivas Kappagantula; Penelope Padmore
Subject: RE: Subm 031-Cascade Areator

Please note:

I brought the 4" Inlet to 8" Piping issue to Rick Wagner w/ NAWE previously (during the request for step details) as a potential bottleneck. He did not reply directly – however if you look at the new drawing 16B it does show these bowls with the inlet as shown in the original drawings of the flow forms (COMPASS had provided drawings previously that also detailed the 4" inlet piping – look on the counter in the RE office). New drawing 16B shows in the drawing of the Flow Forms an eight inch line reducing to a smaller line (assumed to be the 4"). The drawing also calls out the exact aerators in question – therefore I was proceeding with the understanding that this was acceptable. A field detail here is that the Aerator has PVC piping (4") - which will need to be transitioned to the 8" HDPE. Ideal transition (from a hydraulic standpoint) would be a smooth uniform relatively long cone gradually tapering from the 8" to the 4" – reality may differ, based on weather you transitions in PVC or in HDPE - but if a choice exists.

The drawing also provides no detail on securing the Flow Forms – assuming gravity was sufficient – given the size & weight of the structures.

Also the "balancing of the valves – Critical" is this not what the Hydraulic Flow Control structure and specifically the weir gates designed to do? Am I missing the point of the question here?

My thoughts...

Stuart

SECOR International Inc.
Stuart B. Klaus
Senior Geologist
200 West Douglas
Suite 622
Wichita, KS 67202
Phone: **316-262-1555**
Cell: **316-708-3000**
Fax: **316-262-1582**
Email:sklaus@secor.com
********** THIS TRANSMISSION IS INTENDED ONLY FOR THE ADDRESSEE SHOWN ABOVE. IT MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL, OR OTHERWISE PROTECTED FROM DISCLOSURE. IF YOU ARE NOT THE INTENDED RECIPIENT, PLEASE DO NOT READ, COPY, OR USE IT, AND DO NOT DISCLOSE IT TO OTHERS. PLEASE NOTIFY THE SENDER OF THE DELIVERY ERROR BY REPLYING TO THIS MESSAGE AND THEN DELETE IT FROM YOUR SYSTEM. THANK YOU. **********

From: Jerry Resnik [mailto:jresnik@compassenvironmental.com]
Sent: Tuesday, August 14, 2007 8:24 PM
To: Sontchi, Joe P; Ken Hannon; Stuart Klaus; Stephanie Andrews; Srinivas Kappagantula; Penelope Padmore
Cc: Terry LeMasters
Subject: Subm 031-Cascade Areator

Good Evening,

We are requesting an approval on this item.

The vendor had the following queries:

--"how are they dealing with the interface of the cascade system and manifold system, cascade system is 4" terminated"

--"what is the provision for balancing the valves (critical)"

Also, is there any requirement for securing the cascade aerator to the concrete steps?

Thank you in advance

Jerry

--note the dwg attached is the same as the hardcopy I provided earlier today, fyi

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/15/07**

Report # **018**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	63	86
Precipitation		
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Welding HDPE pipe, clearing and grubbing of wetlands area. Installed Icon trench box in manhole H.

Forecasted Work

Continue welding pipe, dig for manhole H and set manhole, place clay in sed pond.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Heat stress	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily QA report **Thursday, August 16, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Attempted installation of manhole H
Excavation of the pilot trench
Fusing pipe
Installing fence near site entrance and around office trailers

Companies Present
SECOR International, Inc., On-Site, Compass Environmental, James Ball, Land Surveyor, SSS Fencing.

Visitors

Name	**Company**
Khaled Al-Akhras	Camp, Dresser and McKee

Equipment/ materials

Item	**Shipped/received**	**Tests:**
Material for liner subgrade	rcv'd	

Meetings
Health and Safety Meetings at 6:30 a.m. and at 12:45 p.m.

Construction Concerns
C1: All three frac tanks were full in about 90 minutes of pumping, and the trench for installing manhole H was not dewatered. Several options are currently being discussed for installation of the manholes and water management.

C2: Material for liner subgrade being deposited in sediment pond has some rocks in it. Will inspect prior to liner installation to verify that it meets the specification. Specification states that no rocks with greater then 1" diameter can be in contact with the liner

Design Clarifications
None noted

Reviewed:
Submittal 016. Bilco Hatches This is the exact product and product number called out in the specifications.
Submittal 029. Meets the standards of 15500 A.
Cascade Bowls. All measurements of the bowls and the supporting structure seem to match.

Currently reviewing:
030 Quality cert for HDPE pipe

021 (revision of 013) Hydraulic control splitter structure.
Revision of QCAP

Date: _____

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/16/07**

Report # **019**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	65	85
Precipitation		
Dom. wind direction	W	
Forecast: Sunny		

Work Performed and Production Rates

Welding HDPE pipe, clearing and grubbing of wetlands area. Pumped water from manhole H to set manhole. Could not get ahead of water to set manhole.

Forecasted Work

Continue welding pipe, place clay in sed pond.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Soil types	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

Daily QA report **Friday, August 17, 2007**
Former Sinclair Refinery, Wellsville, NY

Activities Summary
Clearing and grubbing area for the surface flow wetlands
Spreading subgrade for liner of sedimentation pond
Welding pipe

Companies Present
SECOR International, Inc., On-Site, Compass Environmental.

Visitors

Name	**Company**
Khaled Al-Akhras	Camp, Dresser and McKee

Equipment/ materials

Item	**Shipped/received**	**Tests:**

Meetings
Health and Safety Meetings at 6:30 a.m. and at 12:00 p.m.
Progress/Quality Assurance meeting/conference call at 9:00 am.

Construction Concerns
None noted.

Design Clarifications
None noted.

Submittals
Currently reviewing:
030 Quality cert for HDPE pipe
021 (revision of 013) Hydraulic control splitter structure.

Khaled Al-Akhras would like copies of all QA and QC daily and weekly reports for the dates he was on site.

On Monday, Stephanie Andrews will be taking over as QA official on site.

Date: 9/10/57

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/17/07**

Report # **019**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	65	81
Precipitation		
Dom. wind direction	NW	
Forecast: Sunny		

Work Performed and Production Rates

Welding HDPE pipe, clearing and grubbing of wetlands area.

Forecasted Work

Continue welding pipe, grade clay in sed pond.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Slips, trips, and falls	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

*Personnel Changes

* indicates additional tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, August 20, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW

VISITORS	
Name	***Company***
Steve Wentan	Godwin Pumps
Chris Gill	R & L Carriers
Dave Heater	Hertz Rental Company

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Godwin CD100 MV 4" Wellpoint Pump, 6" FQD Suction, 4" MQD Discharge		X
Godwin HL80M/4045D/RGT 3" x 3" Dri-Prime, 3" FQD Suction, 2" MQD Discharge		X
3" x 20' HD Suction Hose w/Godwin Q.D.	X	
3" Suction Screen w/Godwin Q.D.	X	
6" Suction Screen w/Godwin Q.D.	X	
2" x 50' HD Discharge Hose w/Godwin Q.D.	X	
4" x 50' HD Discharge Hose w/Godwin Q.D.	X	
6" Female x 6" Male x 6" Male Godwin QD Tee	X	
6" 90 Degree Godwin Q.D. Bend	X	
4" Female Godwin Q.D. x 6" Male Evertite	X	
2" Godwin Q.D. End Cap	X	
2" Godwin Q.D. Jet Bend	X	
6" x 10' Godwin Q.D. Header Pipe	X	
6" x 20' Godwin Q.D. Header Pipe	X	
Wellpoint Swing Arm Assemblies	X	
18'-22' Wellpoint w/screen, Point and Riser	X	
Steel Cable		X

DAILY ACTIVITIES
Cut and fill and place clay – Sedimentation Pond
Dig anchor trench for liner – Sedimentation Pond
Compaction – Vertical Wetlands
Cut and fill – Vertical Wetlands
Fusion of HDPE piping to North Plant
Perimeter fence installed around trailers and parking area

MEETINGS

H & S Meeting at 7:00 AM

- Adam Calvaledge's visitor will not be on site until next week.
- One, possibly, two new Compass employees to arrive on site today.
- Review JSAs.

H & S Meeting at 12:45 PM

- No changes to construction activities.
- Jennifer Menges suggested that Compass invest in a fuel cap for all equipment to deter possible future vandalism.
- Joe Sontchi noticed that one of the buildings was left open. Keep in mind that all buildings are to be closed and locked at the end of each work day.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS

1	Both dump trucks are not working properly: • 250 D (Sergio) – Runs for a bit and then breaks down

	• 250 D – Problem with parking brake
1R	*Hertz repairman came to fix both machines at 9:00 AM*
2	Vandalism to dump truck 250 D (Sergio). Two bullet holes were found on the front of the machine after it broke down and was left near the sedimentation pond over the weekend.
2R	*Joe Sontchi was notified by Jennifer Menges.*
3	Began raining at 8:00 AM.
3R	*Mike Vails shut down all construction operation in the South portion of the site. Fusing of the piping and installation of the fencing around the trailers and parking area continued.*
4	Discussion continued in regards to the manhole. Looking into the use of a 8-foot or 10-foot diameter pipe to keep the water from infiltrating in from the sides.
4R	*Scott from On-Site found a pipe manufacturer in Wellsville that make a 10-foot diameter pipe.*

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	*Submittal 032: Revised CQAP* Issues: • Stop work authority is incorrect. Everyone on site has the right to stop work. • Table 5.1 on Page 13, the Standard for the Liner should read < 1/8" fines, not ¼" (See spec section 2670, Page 5)
1R	*RE reviewed the document and is aware of the problems. This will be directed to Jerry so he can make the appropriate changes.*
2	A question was raised by Compass as to what the "material properties for the clay liner" entail, located on the master list.
2R	*An email was sent to the off-site QA Official for clarification.*

SUBMITTALS RECEIVED	
1	*034: Liner Installer* – Installation Instructions, Certification, Qualifications, Schedule, Equipment, Sample, Warranty and Drawing

Signature: Stephanie L. Andrews **Date:** 08/21/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/20/07**

Report # **020**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	50	57
Precipitation	1.0"	
Dom. wind direction	NW	
Forecast Rain		

Work Performed and Production Rates

Welding HDPE pipe, clearing and grubbing of surface flow wetlands. Clearing and grubbing crew shut down at 1 pm due to rain.

Forecasted Work

Continue welding pipe, Installalation of decon pad. Begin excavation of surface flow wetlands.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Wet Surfaces	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Tuesday, August 21, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS
James Ball, Land Surveyor

VISITORS	
Name	***Company***
Chris Murray	Argentieri Cleaners
Bill Reese	Hawbaken
Jeff Pixley	Howgen Transport
Scott Lyday	Stone Mt Masonry
Paul Stratman	Advanced GeoServices

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Concrete blocks for perimeter fencing (2 truck loads)		X
Stone for decon pad		X

DAILY ACTIVITIES
Excavate decon pad
Install decon pad liner
Fusion of HDPE piping to North Plant
Place concrete blocks for perimeter fencing
Perimeter fence installed around trailers and parking area
Clearing (torn down fencing, metal posts, other misc. debris) – Sedimentation Pond
Stockpiling clay for use in Vertical Wetlands
Surveying and staking – Surface Flow Wetlands
Cut and fill – Surface Flow Wetlands

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Review JSAs.
Meeting via conference call at 8:00 AM • Issues with manhole "H" and subsequent manholes • Solutions for a time and cost effective installation • Attendees: SECOR – Ken Hannon, Srinivas Kappagantula, Stephanie Andrews; Compass – Jerry Resnik, Terry LeMasters, Mike Vails, Todd King; BP – Joe Sontchi
H & S Meeting at 12:45 PM • No changes to construction activities.

	SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS
	*** See Meeting Minutes from today's conference call ***

	DESIGN CONCERNS AND RESOLUTIONS
	NONE

	SUBMITTAL CONCERNS AND RESOLUTIONS
1	*Submittal 031: Cascade Aerators* was approved by Rick Wagner from NAWE
1R	*Jerry was given the go-head to order the necessary components.*
2	List of oversdue submittals was generated. Submittals missing from spec section 02261 – Geomembrane Liners – must be received by the schedule installation next week.
2R	*The list was given to Terry and he is working on getting the necessary documentation from the manufacturer.*

3	A question was raised by Compass as to what the "material properties for the clay liner" entail, located on the master list. (Originally reported on 08/20/2007)
2R	*QA Official resolved the situation and said it is not required on this project.*

SUBMITTALS RECEIVED	
	NONE

Signature: Stephanie L. Andrews **Date:** 08/22/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **8/21/07**

Report # **021**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	53	62
Precipitation	.53"	
Dom. wind direction	W	
Forecast Rain		

Work Performed and Production Rates

Welding HDPE pipe, excavation of surface flow wetlands. Installed decon pad.

Forecasted Work

Continue welding pipe, continue excavation of surface flow wetlands.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Swing area	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

*Personnel Changes

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	Kubota cart

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Wednesday, August 22, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS
James Ball, Land Surveying

VISITORS	
Name	***Company***
Brandon Smith	UPS
Herman Werlitz	Industrial Services
Phil Egge	Milton (Cat)
Gary Morgan	Estes
Dave Header	Hertz

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
10' diameter steel pipe		X
Cabinets (Compass)		X

DAILY ACTIVITIES
Fusion of HDPE piping to North Plant and South end of the Site
Perimeter fence installed around parking area
Cut and fill – Surface Flow Wetlands
Compaction – Surface Flow Wetlands
Surveying and Staking – Sedimentation Pond
Grout piping to Manhole "H"
Install 10-foot diameter steel pipe – Manhole "H"

MEETINGS
H & S Meeting at 7:00 AM • Discuss safety concerns and precautions. • Announce agenda for the day (see daily activities). • Review permits. • Review JSAs.
H & S Meeting at 12:50 PM • No changes to construction activities. • Bees are becoming an issue.
Confined Space Entry Meeting at 2:30 PM

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	Roller is not working.
1R	*Fixed by Hertz repairman.*
2	During compaction of Surface Flow Wetland, pumping was observed in a few places.
2R	*Most likely due to excess water in the soil. Areas will need to be filled and compacted again.*
3	330 Cat excavator is not working.
3R	*Fixed by Milton repairman.*
4	Observed 1.5' lifts in Surface Flow Wetland.
4R	*Lifts should be 8". Issue was addressed by removing 10" of fill.*
5	Jim Ball surveyed the Sedimentation Pond and staked the places were the elevation was not up to par.
5R	*Once the soil is dry, Compass will address the issues.*
6	Install 10-foot diameter steel pipe.
6R	*Additional permits were issued: Confined Space Entry and Working at Heights*

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	Two Submittals marked as 034.
1R	*Brought to Jerry's attention. Submittal 034: Liner Installer* – Installation Instructions, Certification, Qualifications, Schedule, Equipment, Sample, Warranty and Drawing should be changed to Submittal 033.

SUBMITTALS RECEIVED	
1	Submittal 034: Weir Gates
2	Submittal 035: Decontamination Plan

Signature: Stephanie L. Andrews **Date:** 08/23/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/22/07**

Report # **022**

Project # **22070706R**

Weather			
		Daily Low	Daily High
Average Temp.		50	70
Precipitation	.09		
Dom. wind direction	W		
Forecast Cloudy			

Work Performed and Production Rates
Welding HDPE pipe, excavation of surface flow wetlands.

Forecasted Work
Continue welding pipe, set manhole H.

Field Discrepancies
None

Meetings

Topic	Companies Represented	Description
Rigging	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

*Personnel Changes

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	345 Cat Excavator

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Thursday, August 23, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS

VISITORS	
Name	***Company***
Gary Thompson	National Fuel
Wally Clarke	National Fuel
Doug Norton	National Fuel
Josh Mudrick	Larry's Latrines
Roy Muntz	Godwin Pumps
Khaled Al-Akhras	CDM

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Godwin Pump		X
Baker Tank – CFUP2116L		X

DAILY ACTIVITIES
Install manhole "H"
Fusing of piping to South end of Site
Perimeter fence installed around parking area

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Review Confined Space permits and Working at Heights permits • Review JSAs.
H & S Meeting at 12:45 PM • No changes to construction activities.
Weekly Progress Meeting at 1:30 PM • Work performed • Work projected for next week • Schedule – roughly 8 days behind • The Sedimentation Pond liner will not be installed next week due to the saturated soil and scheduling issues. • No training on Monday. • 30,000 gallons of groundwater pumped to the Water Treatment Plant during installation of manhole "H". • 10-foot diameter pipe is a success and is reusable. • ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	After the manhole was installed, the elevation was checked and was off.
1R	*The manhole was removed and soil was excavated.*
2	The manhole appears to be on an angle.
2R	*The excavator was used to adjust the unit; however it could not be completely straightened.*
3	National Fuel came on site to disconnect all fuel lines.
4	A Compass employee put fuel in the hydraulic oil compartment of the 924 Cat Loader.
4R	*Machine is out of order.*
5	Began raining at 1:15 PM.
5R	*Mike Vails shut down construction at 2:00 PM. The Site was shut down at 3:00 PM.*

DESIGN CONCERNS AND RESOLUTIONS

	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS RECEIVED	
	NONE

Signature: Stephanie L. Andrews **Date:** 08/24/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/23/07**

Report # **023**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	51	74
Precipitation		
Dom. wind direction	W	
Forecast Cloudy		

Work Performed and Production Rates
Welding HDPE pipe, installation of manhole H.

Forecasted Work
Continue welding pipe, remove Icon system, begin excavation of pilot trench

Field Discrepancies
None

Meetings

Topic	Companies Represented	Description
Severe weather	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

*Personnel Changes

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	345 Cat Excavator

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Friday, August 24, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Craig Martin	Shorts

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Diesel Fuel		X
Baker Tank – CFUP2116L	X	

DAILY ACTIVITIES
Fusing of piping to South end of the Site
Backfill gravel around manhole "H"
Remove shoring equipment around manhole "H"
Dig pilot trench
Fill decon pad with stone
Picking rocks from the Sedimentation Pond

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Likely chance of rain in the afternoon. • Discuss safety concerns and precautions. • Now that the project is underway, some actives are becoming very mundane so extra care should be taken when working with the large equipment especially. • The use of cell phones is getting out of hand. When working on a task, answering a call, text messaging, checking e-mail, listening to music, etc., will not be tolerated. • Review permits. • Review JSAs.
H & S Meeting at 12:00 PM • No changes to construction activities.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	A Compass employee put fuel in the hydraulic oil compartment of the 924 Cat Loader yesterday.
1R	*Machine still out of order.*
2	Shoring equipment would not come out of the ground after excessive vertical force by two excavators.
2R	*Soil around the shoring equipment was excavated. The corners where rattled in hopes that the pieces would have space to move and thus be lifted out easily. Two excavators were placed opposite of each other and concurrently exerted vertical force on two corners ends eventually lifting out the apparatus.*
3	The Sedimentation Pond liner will be installed on September 17, 2007 as per Jerry Resnik.
4	During the excavation of the trench, the banking continued to cave in.
4R	*A temporary steel fence was put up around the trench and work ceased.*
5	The spreader on site is only 37" ID and the bucket will not fit in this.
5R	*A larger spreader (approximately 54") will need to be ordered.*

DESIGN CONCERNS AND RESOLUTIONS	
1	Clarification issue in regards to what type of material is supposed to be placed on top of the gravel in the infiltration trench.

1R	*Gravel will be placed around manhole "H" to match the elevation of gravel in the trench.*
2	According to drawing C-16b, the rebar will not suffice for the amount of concrete that needs to be poured. When Jerry contacted Whitford, they estimated the cost to be four times greater than initially expected.
2R	*Will discuss with Ken Hannon once he returns next week.*

SUBMITTAL CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS RECEIVED	
1	Certs for four rolls (out of 35 total) of the 80-mil geomembrane liner. (No submittal sheet was given.)

Signature: Stephanie L Andrews **Date:** 06/27/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **8/24/07**

Report # **024**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	56	84
Precipitation		
Dom. wind direction	W	
Forecast Sunny		

Work Performed and Production Rates

Welding HDPE pipe, Remove Icon system. Extend material staging area.

Forecasted Work

Continue welding pipe, begin excavation of pilot trench

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Overhead power lines	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

*Personnel Changes

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	
Mike Forman	Compass Environmental	Laborer	8/6/07	
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Equipment used**	924 Cat loader
	650 John Deere dozer
	330 Cat excavator
	John Deere off road truck
	700 John Deere dozer
	345 Cat Excavator

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, August 27, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS
James Ball, Land Surveyor

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Fred Eysaman	Howgen Transport
Thomas Dell	Howgen Transport
Jeff Pixley	Howgen Transport
Ron Giroux	Howgen Transport
Eric Kurtz	Milton Cat
Brenda Grover	Graves Toilet
Ryan Wiemer	Welmer Concrete
Brandon Smith	UPS
Craig Morton	Shorts
Mark Kelner	Kelner Supply
Lyndsey Peters	CPR Trainer
Jody Forster	Godwin Pumps

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
16 loads of stone – Pilot Trench		X
Godwin CD150M/4045D/RGT 6" Dri-Prime Pump	X	
6" Female Godwin QD x 6" Male Evertite	X	
6" x 10' HD Suction Hose w/Godwin Q.D.	X	
6" x 20' HD Suction Hose w/Godwin Q.D.	X	
6" x 50' HD Discharge Hose w/Evertite	X	
Godwin CD150M/4045D/RGT 6" Dri-Prime Pump	X	
6" FQD Suction, 6" Met Discharge	X	
3" x 20' HD Suction Hose w/Evertite	X	
6" x 20' HD Suction Hose w/Godwin Q.D.	X	
6" x 50' HD Discharge Hose w/Evertite	X	
6" Female Godwin Q.D. x 6" 150# Flange Mounted on Suction	X	
6" Male Evertite x 6" Flange Mounted on Discharge	X	
3" x 50' HD Discharge Hose	X	

DAILY ACTIVITIES
Pump rainwater out of Sedimentation Pond
Set-up soil staging area
Jar test 16 loads of gravel – All loads passed
Remove 10-foot diameter steel pipe
Finish installing perimeter fencing
Move Icon equipment and other materials to decon pad

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Reminder: First Aid and CPR training today at 1:00 PM. • Permits: Working at Heights and Ground Disturbance. • Review JSAs.
H & S Meeting at 12:45 PM

• No changes to construction activities.
First Aid and CPR Training at 1:00 PM

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	A Compass employee put fuel in the hydraulic oil compartment of the 924 Cat Loader on Thursday, August 23, 2007.
1R	*Milton (Cat) repairman arrived to fix the machine. The machine could not be fixed. They will have to send someone else out to fix it.*
2	The 10-foot diameter steel pipe took a majority of the morning to remove from the ground. This may become a time constraint for subsequent uses.
3	Wind storm over the weekend lifted up some left over debris by the demoed building. Some of these pieces have nails sticking out of them.
3R	*Compass and SECOR are aware of the issue.*
4	Manhole "H" tilted to the North after the 10-foot diameter steel pipe was removed primarily due to the uneven settlement of the subgrade. The manhole faced East before the pipe was removed.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	The Weekly Progress Meeting Minutes were distributed earlier today and Compass has some issues regarding overdue submittals.
1R	*QA Official will sit down with Jerry Resnik and Terry LeMasters tomorrow (08/28/2007) to review.*

SUBMITTALS RECEIVED	
	NONE

Signature: Stephanie L. Andrews **Date:** 08/28/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **8/27/07**

Report # **025**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	52	85
Precipitation		
Dom. wind direction	W	
Forecast Sunny		

Work Performed and Production Rates

Removed 10ft x 15ft steel pipe from around manhole H.

Forecasted Work

Install trench boxes and begin excavation of pilot trench working from manhole H toward the North.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Pinch points/Rigging	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates additional tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

#1 round gravel	Buffalo Crushed	581.35 ton	Pilot Trench

***Equipment used**	
	345 Excavator
	330 Cat excavator
	John Deere off road truck

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* Indicates additional tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Tuesday, August 28, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Norm Braun	Pariso Trucking
Eric Kurtz	Milton (Cat)

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*

DAILY ACTIVITIES
Move fill in manhole
Install trench box 1 and 2 and weave pipe
Excavate (North) Pilot Trench
Re-position trench box – 3 Sections completed (roughly 51 feet)
Grade soil
Place aggregate backfill in trench

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • There are too many people around the excavation site. Jennifer Menges suggested delineating an area for observing the work using caution tape. • Permits: Working at Heights and Ground Disturbance • Review JSAs.
H & S Meeting at 12:45 PM • No changes to construction activities.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	A Compass employee put fuel in the hydraulic oil compartment of the 924 Cat Loader on Thursday, August 23, 2007.
1R	*Milton (Cat) repairman arrived to fix the machine—there was an electrical problem.*

DESIGN CONCERNS AND RESOLUTIONS	
1	SECOR PM reviewed the C-16b design issue (see 08/24/2007).
1R	*Calculations show that there is less concrete needed than the original design. This will be brought to Compass' attention.*

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	An updated over-due submittal list was electronically distributed to Jerry Resnik and Terry LeMaster for review.

SUBMITTALS RECEIVED	
1	L.C. Whitford Co. Inc./Triple S Security Co. Fencing Installation (No submittal sheet was given.)

Signature: Stephanie L. Andrews **Date:** 08/30/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **8/28/07**

Report # **026**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	50	86
Precipitation		
Dom. wind direction	W	
Forecast Sunny		

Work Performed and Production Rates

Excavated approximately 70 ft of pilot trench from manhole H to the north. Installed perforated pipe. Invert of 4 inch perforated pipe @ 1481. Bottom of trench below pipe 1480.5. 6 inches of pipe bedding. Top of stone @1482.

Forecasted Work

Continue excavation of pilot trench.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Keeping focused	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Wednesday, August 29, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Chad Lincoln	JD Leydecker

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Weiser Concrete Cascade Aerator Splitter Box		X
Weiser Concrete Cascade Aerator Lids (2)		X
Weiser Concrete Manhole H – Section 4		X
LCW SSS Equipment	X (Picked up)	

DAILY ACTIVITIES
Remove excess debris from demoed building
Clearing of trees and shrubs at Manhole "H"
Excavate and reposition trench box in North Pilot Trench – 5 sections (roughly 88 feet)
Excavate South Pilot Trench – about 200 feet
Grade soil – North Pilot Trench
Backfill with aggregate stone – North Pilot Trench
Place liner – North Pilot Trench
Backfill using native soil – North Pilot Trench

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Observation point used yesterday is sufficient.
- Make eye contact with operators when walking within their swing radius.
- Permits: Working at Heights and Ground Disturbance.
- Compass has a new process for reviewing JSAs.

H & S Meeting at 12:45 PM

- No changes to construction activities.
- Jennifer Menges asked Compass to please clean up the Site (water bottles, loose caution tape, debris, etc.) by the end of the day.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	Kids were caught trespassing on the property.
1R	*Dave Pinney is handling the situation.*
2	Excavation of the Pilot Trench continued at a slow pace. To date, about 135 feet of the North Pilot Trench has been completed.

DESIGN CONCERNS AND RESOLUTIONS	
1	The 4-inch diameter perforated pipe will extend 25 feet from Manhole "H" with the remainder of the pipe at a 45° angle.

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	A submittal for the liner used in the soil staging area has not been received.

1R	*This issue has been directed to Terry LeMasters.*

SUBMITTALS RECEIVED	
	NONE

Signature: Stephanie L. Andrews **Date:** 08/30/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **8/29/07**

Report # **027**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	57	88
Precipitation		
Dom. wind direction	W	
Forecast Sunny		

Work Performed and Production Rates

Continue excavation of pilot trench. Bottom of trench 1481 all 4 shots; top of stone 1492 all 4 shots. Total length for day was approximately 80ft starting off from the 70 ft done yesterday. Total length to date 150' from manhole H working North.

Forecasted Work

Continue excavation of pilot trench.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
3 points of contact	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Thursday, August 30, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
NONE		

DAILY ACTIVITIES
Excavate North Pilot Trench
Grading of soil
Backing trench with aggregate

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • A Health and Safety person must be on Site if Compass decides to work late. Also, permits must be extended due to 5:30 pm expiration. • Permits: Working at Heights and Ground Disturbance. • Review JSAs.
Weekly Progress Meeting at 9:00 AM • No safety issues • Work performed • Work projected for next week • Schedule – roughly 9 days behind • Scope Items: Cascade Aerator bowls, manholes or wells? • New Compass personnel will be arriving on Wednesday: Todd Weaver (dozer operator); Monday, September 10: 4 additional people • Discussion on the leveling of subsequent manholes • ***For more details see Weekly Progress Meeting Minutes***
H & S Meeting at 12:45 PM • No changes to construction activities

	SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS
1	Pilot trench excavated to North of Manhole H is nearing completion. Approximately 10' feet more to be excavated to completion.
2	Temporary fence installed all around the trench and access to the trench from safety standpoint.
3	Work onsite to begin again on 09/05/07 (due to Labor day long weekend).

	DESIGN CONCERNS AND RESOLUTIONS
	NONE

	SUBMITTAL CONCERNS AND RESOLUTIONS
	NONE

	SUBMITTALS RECEIVED
	NONE

Signature: Stephanie L. Andrews **Date:** 09/05/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **8/30/07**

Report # **028**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	52	85
Precipitation		
Dom. wind direction	W	
Forecast Sunny		

Work Performed and Production Rates

Continue excavation of pilot trench. Bottom of trench 1481 top of stone 1492, one shot every 20 ft. Total of 3 shots. Total length of trench for day approximately 50ft starting at 150ft from the North of manhole H and continuing to end of pilot trench for North side. 200ft total length.

Forecasted Work

Clean frac tanks

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Proper lifting	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Wednesday, September 5, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Jeff Murray	FedEx
Marvin Grover	Grover Toilets
Sean Pratt	Kellner
Chris Murray	Argentieri Cleaners

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
NONE		

DAILY ACTIVITIES
Decon of one frac tank and ¾ completion of the second tank
Placement of liner above aggregate backfill in North run of the Pilot Trench totaling about 120 feet
First lift of soil added above the liner in the North run of the Pilot Trench
Move trench box from North to South run
Finish North run of Pilot Trench

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights, Confined Space and Ground Disturbance. • Review JSAs.
H & S Meeting at 12:45 PM • No changes to construction activities • Name change on confined space permit.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	Issues in regards to the trench excavation measurements and readings.
1R	*After talking with Jerry Resnik, depth measurements will be taken in two spots-5 feet from each end of the trench box-and every 10 feet after the trench box is moved to the adjoining location. (Currently Compass is measuring the trench bottom at the mid point of the trench, once every 20 feet.) Also, appropriate measurements will be taken after the aggregate backfill is in place and prior to the placement of the trench liner.*

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS RECEIVED	
	NONE

Signature: Stephanie L. Andrews **Date:** 09/07/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/05/07**

Report # **029**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		58	88
Precipitation			
Dom. wind direction	W		
Forecast Sunny			

Work Performed and Production Rates

Cleaned 2 frac tanks, excavated 200 ft of trench to approximately 8 ft below grade Working from manhole H to the South. Repaired pins in trench box.

Forecasted Work

Continue excavation of pilot trench.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Eye contact with operators.	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Thursday, September 6, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Rich DePietro	Everready Express
John Hardy	Vantage Equipment

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
ICON system	X	

DAILY ACTIVITIES
Excavation of 97 feet of the Pilot Trench measured from South side
Backfill trench with aggregate fill
Place geotextile in trench covering aggregate fill
Lay first lift of native soil over geotextile
Decon frac tanks
Graded soil in staging area to allow for additional storage
Maintenance repairs to the silt fence around soil staging area

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities) • Discuss safety concerns and precautions • Permits: Working at Heights, Confined Space and Ground Disturbance • Interactive JSA review • BP - Lesson Learned
H & S Meeting at 12:45 PM • No changes to construction activities
Weekly Progress Meeting at 1:35 PM • No safety issues • Work performed • Work projected for next week • Schedule – roughly 9 days behind • As of today, new work hours - 7:00 AM to 8:00 PM • Compass is scheduled to work on Saturday, September 15 • Four new Compass workers will be arriving on Monday, September 10 • Compass has looked at viable solutions for the trenching along the frail building and an approach to handling the electrical poles and overhead wires in area of trench excavation • ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	Some of the 6" HDPE pipes lying parallel to the South run of the Pilot Trench have some scratch and cuts on the surface.
1R	*The pipes should be inspected prior to fusing them together. The pipes with deeper marks should be thoroughly looked at to ensure that the pipe will not be an issue in the future.*
2	Excavated soil placed in the soil staging area has seeped over the silt fence causing it to detach from the posts.
2R	*Compass took care of the issue and the silt fence was reattached to the posts.*

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	An updated over-due submittal list was distributed to Jerry Resnik at the Weekly Progress Meeting.
1R	*Jerry Resnik and Terry LeMasters sat down last week and reviewed the over-due submittals and submittals with issues. They will discuss with the QA Official when Terry returns.*

SUBMITTALS RECEIVED	
	NONE

Signature: Stephanie L. Andrews **Date:** 09/07/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **9/06/07**

Report # **030**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	53	86
Precipitation		
Dom. wind direction	W	
Forecast Sunny		

Work Performed and Production Rates

Continue excavation of pilot trench. Installed 97' of trench Working from Manhole H to the South, bottom of trench elevation @1479.17 and top of stone elevation @1489.17. Also cleaned one additional frac tank.

Forecasted Work

Continue excavation of pilot trench.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Heat Stress	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Friday, September 7, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Kathren Young	NYS Senator
Brad Thompson	Wellsville Mayor
Bruce Johnson	BP
Chris Melroth	Capital Consultants
Bob Miner	Price Minor Creative Strategies

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
NONE		

DAILY ACTIVITIES
Excavation of Pilot Trench South of Manhole H – about 20 feet (not completed due to broken hydraulic cable on 345 Cat excavator)
Place Geotextile in Pilot Trench South of Manhole H
Continue grading soil in staging area to allow for additional storage
Weld pipe
Cut Surface Flow Wetlands

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities) • Discuss safety concerns and precautions • Permits: Working at Heights and Ground Disturbance • Interactive JSA review
H & S Luncheon at 12:00 PM • Excavation of the trench ceased for the day • A small crew will starting cutting the Surface Flow Wetlands

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	Compass developed a new method to laying the Geotextile in the trench. (Geotextile is wrapped around an old rack handle and then positioned through the holes on the end of the trench box so when the box is moved, the fabric will roll itself off.)
2	The hydraulic cable snapped on the 345 Cat excavator after the boom hit the side of the trench box.
2R	*Compass contacted Cat and a repairman is scheduled to be on Site tomorrow, Saturday, September 8.*

DESIGN CONCERNS AND RESOLUTIONS	
1	The trench was excavated to about 1479', deeper than the 1482' noted on the drawing. The trench was backfilled with aggregate to about 1489'. The drawings call for the trench to be filled with aggregate to 1492'. The normal groundwater elevation is about 1491'.
1R	*SECOR will physically verify some of the trench measurements. In addition, we will require Compass to provide detailed QC reports in a timely manner.*

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	Jerry is awaiting approval on *Submittal 034: Weir Gates.*
1R	*Submittal 034 is being thoroughly review by the Resident Engineer and QA Official.*
2	Terry LeMasters was notified about submitting trench measurements in Compass' Daily Construction QA

	Reports.
3	Terry LeMasters was notified to submit the latest round of Jar Test result to the QA Official

SUBMITTALS RECEIVED	
	NONE

Signature: Stephanie L. Andrews **Date:** 10/01/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/07/07**

Report # **031**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	57	88
Precipitation		
Dom. wind direction	W	
Forecast Sunny		

Work Performed and Production Rates

Cut and hauled in wetlands. Welded 600 ft of pipe.

Forecasted Work

Continue excavation of pilot trench.

Field Discrepancies

None

Meetings

Topic	Companies Represented	Description
Proper Rigging	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

*Personnel Changes

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, September 10, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP

VISITORS	
Name	*Company*
Khaled Al-Akhras	CDM
Fred Eysman	Howgen
Ron Draper	Howgen
John Garland	Milton Cat (repair)
Brenda Grover	Grover's Toilets

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
6 Loads of gravel, jar test – all pass.		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, safety precautions mentioned: being aware of moving equipment, communicating with the operator, staying out of swing radius of the machinery.
	Permits: ground disturbance, working at heights, hot work permits.
	Planned activities, trenching, with backfilling of trench, continued fusing of pipe, dewatering sedimentation pond, cutting/ filling wetlands.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	RE Stuart Klaus measured splitter control box structure, and noted that the windows cut into the structure may not be level when installed. Concern has been brought to Compass for further investigation.
	Short staffed in the morning, work on trench delayed for an hour.
	Safety concern: Trenching excavation. At 1250, noticed that the wall of the trench directly underneath the excavator was undercut, adjoining walls had large amounts of material sloughing off. Brought this to the attention of the competent person. Noticed that waves in the standing water, generated by excavating were eroding the base of the wall where the excavator was. Pointed this out to RE. Khaled from CDM also noticed it and said "That is not really safe." RE called Justin down to look at it, because he could not see the undercutting from where he stood. Justin then informed the operator, who back the excavator a few feet, and continued. Again, the waves undercut the bank more severely, at this point, approached Shane and told him what was going on at the bottom of the wall. He backed up again. Brought concern to Compass's H and S officer. He talked to the operator and the person who was checking the depth of the trench, to make sure this was more closely monitored. Also agreed that more coordination so that better over site of the trench operation was done was needed. At 1550, went back out to the trench and noticed the trench wall beneath the excavator was banked, and the excavator was further away from the edge of the trench.

DESIGN CONCERNS AND RESOLUTIONS	

SUBMITTAL CONCERNS AND RESOLUTIONS	
034 reviewed	• Missing condensation vents on the stem cover. • Materials listed are correct, but no certification that the materials meet the required tests. • Compression cord: materials not listed, required to be nitrile, M6BG 708, A14, B14, E014, E034. Resident Engineer Stuart Klaus verified that the measurements of the gates will fit into the splitter control structure box which is on site.
DCQAR's	Received 8/28 through 8/30, and 9/5 to 9/7.
033-Reviewed	• No deficiencies noted.
036 rcv'd	Fence info – cover page received, info received on Friday, not yet reviewed.
037 rcv'd	Utility location subcontractor qualifications-no subcontractor was used, therefore they do not need to have the qualifications for one at this time.
038 rcv'd	Geotextile sample
039 rcv'd	Goulds Pumps Installation, operation and maintenance instructions.
040 rcv'd	MC-II Flow Analyzer User Manual

Signature: _____ **Date:** 9/11/07

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **9/10/07**

Report # **032**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		50	73
Precipitation	.10		
Dom. wind direction	W		
Forecast Rain			

Work Performed and Production Rates

Excavated pilot trench beginning 97' to the South of manhole H. 120' South of manhole H bottom of trench 1482 and top of stone 1492. 140' south of manhole H bottom of trench 1482 and top of stone 1492. 160' South of manhole H bottom of trench 1482 and top of stone 1492. 180' South of manhole H bottom of trench 1482 and top of stone 1492. Welded pipe.

Forecasted Work

Resume construction of surface flow wetlands. Continue welding pipe.

Field Discrepancies

Instructed by Stuart to keep elevations 1482 bottom of trench and 1492 top of stone on remaining 103' of trench.

Meetings

Topic	Companies Represented	Description
Slips Trips And Falls	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes				
Name	**Company**	**Title**	**Mobilization**	**Demobilization**
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries			
Description	Mobilization	Demobilization	Comments
*Material Shipped Offsite			

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Deliveries			
Material type	Vendor	Quantity	Purpose

*Equipment used	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

*Submittals	Transmittal	Section	Subsection	ID

*Analytical Data	Sample ID	Type	Number of Pages	Provider

*Erosion Control	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Tuesday, September 11, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP
On-Site Environmental

VISITORS	
Name	*Company*
Khaled Al-Akhras	CDM
Brandon Smith	UPS
Steve Fesetch	Fed Ex

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Safety equipment for Compass		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, safety precautions mentioned: JSA for cutting and filling reviewed.
	Permits: ground disturbance and hot work.
	Planned activities: cutting and filling wetlands, fusing pipe.
	Cutting, filling, rolling of lifts in the vertical wetlands. Excavating in the surface flow wetlands.
1245	Afternoon H & S meeting. Possibility of thunderstorms in the afternoon.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Compacting and filling of Pilot Trench will not happen today because the soil is too wet.
	East side of vertical wetlands is too wet for compaction. Both will be allowed to dry.
	Pilot Trench excavation was completed on 9/10/07
	Heavy rain moved into area in the afternoon, excavation and compaction was halted. Pipe fusing continued.
	Joe Sontchi, Ken Hannon, Stuart Klaus, Mike V. and Jerry discussed placement of staging areas and haul routes around the location of manhole A.
	Moving of overhead lines will now take place on the 24th of September.
	Stockpiled material was checked to observe moisture content for possible re-use.

DESIGN CONCERNS AND RESOLUTIONS	
	None noted

SUBMITTAL CONCERNS AND RESOLUTIONS	
041 rcv'd/returned	Geotechnical Analysis-Native Fill and Imported Material. This was returned, to be double checked by Compass.

Signature: _____ **Date:** 9/12/07

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **9/11/07**

Report # **033**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		54	67
Precipitation	.20		
Dom. wind direction	W		
Forecast Rain			

Work Performed and Production Rates

Welded 40 sections of 40ft 6" HDPE pipe (1600 ft). Excavate and build surface flow wetlands excavated and placed 1185 yds of material. Compass received verbal approval to do full scale trench.

Forecasted Work

Start clearing and grubbing along area of trench from North end of pilot trench to waste water treatment plant. Continue welding pipe.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Truck traffic	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Wednesday, September 12, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP
On-Site Environmental

VISITORS	
Name	*Company*
Brent Kelley	Trout Unlimited
Erin Frame	Hertz

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
No deliveries today.		

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, safety precautions mentioned: JSA for cutting and filling reviewed.
	Permits: ground disturbance and hot work.
	Planned activities: cutting and filling wetlands, moving trench boxes to area of Manhole "A". Clearing and grubbing of haul road from Manhole "H" to Manhole "A". Fusing pipe is complete for now.
	Clearing, grubbing, cutting, filling, rolling of lifts in the vertical wetlands.
1245	Afternoon H & S meeting. No change in scope. Parking down at the water treatment plant is in the back, where the frac tanks were.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Liner installation will be delayed one week, due to excessive rain.
	Fencing requirements for the site were discussed by SECOR, Compass and BP. Resolution: The fencing will be chain linked fence, for perimeter/site security, on-site fencing to deliminiate open excavations will be snow fence, open excavations (i.e., manhole H) are, whenever possible, covered by some kind of barrier, such as a length of chain link fence.
	Adam Calvalage left at 1:00 pm, Terry McMaster will now be the H and officer for Compass.

DESIGN CONCERNS AND RESOLUTIONS	
	Clearing and grubbing of haul road complete, some trees/branches leaning on abandoned building will be moved, to no longer be in contact with the building.

SUBMITTAL CONCERNS AND RESOLUTIONS	
026 returned for clarification	Angle iron needs to have at least 3/16" thickness, in the drawings, it is not specified.
034 (Weir Gates) returned for clarification	• Missing condensation vents on the stem cover. • Materials listed are correct, but no certification that the materials meet the required tests. • Compression cord: materials not listed, required to be nitrile, M6BG 708, A14, B14, E014, E034.
032-007a (QCAP) returned	• Stop work authority is incorrect • Qualifications and duties of each of the major personnel are missing • The jar test standard is 1/8 inch, not 1/4 inch.
DQAR's received	9/10 and 9/11
022 (Piezometer) returned	Specification calls for .020 slot with no filter pack, plan as received calls for .010 slot, and a filter pack.
026 returned	Need to specify that the angle iron is 3/16" thick.
042 received/ approved	Revised QCAP reviewed, earlier noted deficiencies have been corrected. QA approved.

012-020 returned	Hydraulic Control Splitter Structure- reviewed by QA and RE, 1. The three sections should be (from left to right) 36¼", 36 ¾", and 36¼", 2. RE recommends the following to be cast into the center walls, 4" diameter Sch. 40 ductile iron/galvanized iron nipple w/ flange adjacent gate valve. 3. Angle iron is 3/16" thick. 4. Manufacturer asked for clarification on weir gate window, there is no grate, just an opening.
043-022A received	Piezometer Materials and plan. Now specifies .020 slotted pipe. Plan not attached.
044 received/approved with variance	Bracket now states 3/16" thickness. Difference of 2" in height between floor and bottom of pipes ok'd by RE.

Signature: _____ **Date:** 9/13/02

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/12/07**

Report # **034**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	49	65
Precipitation		
Dom. wind direction	NW	
Forecast; Sunny		

Work Performed and Production Rates

Welded 36 sections of 6" HDPE pipe. Clearing and grubbing road from North end of pilot trench to water treatment plant.

Forecasted Work

Install temporary fence at North end of full scale trench. Begin excavation of pretrench. Begin excavation of utility trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Site traffic patterns	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Thursday, September 13, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP
On-Site Environmental
Village of Wellsville Department of Public Works

VISITORS	
Name	*Company*
Bruce Cody	Short's
Joe Greenan	LaForge
Fred Isiman Ron Eivoux	Howagen
James Miller Ron Draper	Draper
Lawrence Morakic	Larry's Latrines

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
16 loads of gravel, all passed jar test.		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, safety concerns, JSA's reviewed.
1245	PM health and safety meeting- workers cautioned that retired people from Hillside Homes may be out driving in the afternoon, adding to traffic at the north end of the Site. BP "lessons learned" presentation.
1330	Weekly QA meeting- See meeting notes for details
	Excavation began on the Infiltration Trench near Manhole A.
	Pretrenching activities and fencing from near manhole A towards Cascade Aerator
	Excavation of utility trench and installed .3' of pipe bedding at bottom of trench.
	City of Wellsville crew began removal of utility pole near treatment plant.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1100	Water line that had been turned off by city was excavated. Line was too old to save and will be repaired by Compass once excavation is completed. City of Wellsville indicated that no one would be with out water. The City had to shut off a second valve due to because of backflow.
1800	Excavation was near RW-3 (Used for current P&T system). Excavated the line by hand and marked location in the field.
1900	Observed leaking fluids on Caterpillar 345C Excavator
	Terry McMasters is the acting Health and Safety Officer, in Adam Calvalage's absence.

DESIGN CONCERNS AND RESOLUTIONS	
0845	Ball Surveying was not able to utilize some detail mapping due to coordinates not aligning with the base map. They were instructed via email to use Drawing C-14 for wetlands detail.

SUBMITTAL CONCERNS AND RESOLUTIONS	
1330	List of Submittals discussed with Compass including those submittals that are needed, or in progress of being reviewed.
	Received a weekly QA report from Compass.

Signature: _____ **Date:** 9/14/07

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/13/07**

Report # **035**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	50	66
Precipitation		
Dom. wind direction	N	
Forecast; Sunny		

Work Performed and Production Rates

Pretrenched approximately 300' of trench starting at North end and working to the South. Began digging utility trench from South side of Manhole working South. Received 570.49 ton of infiltration trench stone and stockpiled on North end of trench.

Forecasted Work

Begin excavation of full scale trench starting at the North end. Install safety fence around trail to prevent people from getting to excavation and around truck traffic. Install silt fence at North end down grade from the excavation.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Keep clear of haul roads.	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Deliveries			
Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Friday, September 14, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP
On-Site Environmental
Village of Wellsville DPW

VISITORS	
Name	*Company*
Branden Smith	UPS
Brian Graser	Hane's Supply
John Barand	Milton Cat
Fred Isiman Ron Eivoux	Howagen
James Miller Ron Draper	Draper

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
15 Loads of gravel, all passed jar test		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions.
1200	Safety lunch safety observation voting held off until Monday.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Pedestrians at the North end might try to get around orange safety fence, operators and drivers were cautioned to be aware that there may be people without safety orange on. A security guard will be posted at that end to deter foot traffic.
	Depth to water at N end of Infiltration Trench is about 12-15' below ground surface
	Utility pole at N end moved by Village of Wellsville out of way of trenching.
	Soil at the bottom of trench was clayey and wet, resulting in problems with the haul trucks getting stuck. Laying soil on top did not solve the problem completely.
	Nuisance odor from site is noticeable, air monitoring did not detect any constituents of concern.

DESIGN CONCERNS AND RESOLUTIONS	
	Continued rebuilding and reconstruction of the "pre-trench" haul road did not prevent haul trucks from getting stuck.

SUBMITTAL CONCERNS AND RESOLUTIONS	
043 received	Not complete, well drilling/development plan is not attached.
044 received	Being reviewed.

Signature: Stephanie Andrews for

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Date: 11/01/2007

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **9/14/07**

Report # **036**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	48	64
Precipitation		
Dom. wind direction	N	
Forecast; Sunny		

Work Performed and Production Rates

Excavated 40' of full scale trench. Started at far North end and excavating South. First elevation shot was 20 South bottom of trench 1477 top of stone 1487. Second elevation shot 40' South of start of trench bottom of trench 1477, top of stone 1487. Installed safety fence around trail.

Forecasted Work

Continue excavation of full scale trench. Site training for new employees.

Field Discrepancies

Subgrade that trucks are running on to soft to handle the weight of the trucks. Having to push them out every load.

Meetings

Topic	Companies Represented	Description
Overhead power.	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 DOZER
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, September 17, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP
On-Site Environmental

VISITORS	
Name	*Company*
Brenda Grover	Grover's Toilets
Jeff Milks Lance Dodge	LCW/Triple S Fencing
Joe Haney	John's Towing
Steve Goodrich	Southern Tier Taxi
Brian Grazcyk	Land Air Express
Bill Reese	How Baker

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Small roller: Ingersoll Rand model SD-45TF s/n CSC59089		X
Wire for trenchbox pins		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions.
1245	Afternoon H & S meeting. Voted on safety observations.
	Excavation of infiltration trench in the areas of Manhole A. The area for manhole A was not excavated, it was skipped over until the manhole is ready to install. Excavation continued to the south of the manhole.
	Approximately 120' of trench excavated so far, and about 80' backfilled (intial lift) and compacted.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	There was an increase in Pedestrian traffic at the North end.
	Continued problems with the haul trucks getting stuck in the soft wet soil at the bottom of the trench.

DESIGN CONCERNS AND RESOLUTIONS	
	Manhole A is approximately 175' from the north end of the trench, instead of 200'. Resolution: the surveyors will be out tomorrow to recheck.

SUBMITTAL CONCERNS AND RESOLUTIONS	
044	(revised) Pipe testing plan with manufacturer's testing recommendations.

Signature: _____ **Date:** 9/18/07

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/13/07**

Report # **035**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	50	66
Precipitation		
Dom. wind direction	N	
Forecast; Sunny		

Work Performed and Production Rates

Excavating full scale trench, began excavating trench 60' South of start of trench. Bottom of trench 1477, top of stone 1487. 80ft from start of trench, bottom of trench 1477, top of stone 1487. 100ft from start of trench bottom of stone 1477, top of trench 1487, 120' from start of trench, bottom of trench 1477, top of stone 1487. 140ft from start of trench, bottom of trench 1477, top of trench 1487. 160ft from start of trench, bottom of trench 1477, top of stone 1487. 200ft from start of trench, bottom of trench 1477, top of stone 1487.

Forecasted Work

Continue excavation of full scale trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
House keeping	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Tuesday, September 18, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP
On-Site Environmental
James Ball Surveying

VISITORS	
Name	*Company*
Chad McAbe	Hertz/Anderson Trucking
Aaron Frane Dave Shemshek	Hertz
Jeremy Chilson	Vitale Trucking
Chris Murray	Agenten

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Deere Excavator, model # 230C CC from Hertz.		X
Bucket for excavator from Hertz		

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions.
1245	Afternoon H & S meeting. PPE requirements for delivery personnel if they are outside of the fenced in parking area are the same as for workers at the site. Any person who does not have the correct PPE.
	Rockhound was not working correctly, mechanic being called tomorrow.
1945	About 140' of the Infiltration Trench was excavated today.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Manhole A location: It appears that the stake had been moved. The surveying crew resurveyed, and placed the marker in the correct location, approximately 25 south. The trench was cut too close to the correct location, and some adjustment in excavating will have to be made.
	Compacted soils at the N end of the Infiltration Trench are too soft (assumed due to excessive moisture). Backfilling will be suspended until a plan is developed to allow effective compaction by drying soil or using other suitable backfill.
	Checked the stone in trench after moving trench box forward, it was .25 feet lower than target elevation. Will add additional aggregate to obtain grade before moving other trench boxes.

DESIGN CONCERNS AND RESOLUTIONS	

SUBMITTAL CONCERNS AND RESOLUTIONS	
041	Geotechnical Analysis – Native Fill & Imported materials- returned by RE.
(no submittal #'s)	Well plan edited to show no use of sand filter pack.
	Email from Mark Tilley (Landsaver) certifying the dates of manufacture of two rolls of geomembrane by Agru America.

Signature: _____ **Date:** 9/25/07

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/18/07**

Report # **037**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		46	75
Precipitation			
Dom. wind direction	N		
Forecast; Sunny			

Work Performed and Production Rates

Continued excavation of full scale trench. 200ft from North End, btm elev 1477, top of stone 1487. 220 ft from North, btm elev 1477. top of stone 1487. 240 ft btm 1477, tos 1487. 260 ft btm 1477, tos 1487. 280ft btm 1477, tos 1487. 300 ft btm 1477, tos 1487. 320 ft btm 1477, tos 1487. 340 ft btm 1477, tos 1487.

Forecasted Work

Continue excavation of full scale trench. Continue excavation of utility trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Pinch Points	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Deliveries			
Material type	Vendor	Quantity	Purpose

*Equipment used	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

*Submittals	Transmittal	Section	Subsection	ID

*Analytical Data	Sample ID	Type	Number of Pages	Provider

*Erosion Control	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Wednesday, September 19, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP
On-Site Environmental
James Ball Surveying

VISITORS	
Name	*Company*
Erin Frame	Hertz
Nathan McLane	Atlantic Testing Laboratories
Jeff Milks	LCW/triple S fencing
Jon Ekas	DHL
Jeremy Chilson	Vitale Trucking

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Safety supplies to Compass.		

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions.
1245	Afternoon H & S meeting.
	TESTING PERFORMED: Density/moisture content of berm of the vertical flow wetland.
	130' of infiltration trench excavated
	Terry LeMasters was the Health and Safety officer for Compass from 13:00 to 19:30.
1930	Approximately 130' of Infiltration Trench was excavated.
	Preparing sedimentation pond for liner installation.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Results varied from 90 to 95.8% maximum compaction. The tests which were performed at a depth of 4 feet did not pass. This may have been due to the excavator disturbing the soil.
	RE met with National Grid and On-Site concerning utility pole that is near manhole C. National Grid will be working on placing a temporary pole to support the lines during excavation. National Grid will determine what permits will be needed.
	RE met with Compass to discuss handling/drying and compaction of soils.

DESIGN CONCERNS AND RESOLUTIONS	
	None noted

SUBMITTAL CONCERNS AND RESOLUTIONS	
041	Geotechnical Analysis- corrected.
No submittal #	Density testing results and calibration record for Troxler gauge used in density testing

Signature: _____ **Date:** 9/25/07

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/19/07**

Report # **038**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	52	80
Precipitation		
Dom. wind direction	N	
Forecast; Sunny		

Work Performed and Production Rates

Excavate full scale trench. 380 ft from North end btm 1477, tos 1488. 400 ft btm 1477, tos 1487. 420 ft btm 1477, tos 1487. 440 ft btm 1477, tos 1487. 460 ft btm 1477, tos 1487. 480 ft btm 1477, tos 1487. 500 ft btm 1477, tos 1487.

Forecasted Work

Continue excavation of full scale trench. Continue excavation of utility trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Eye contact with operators	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Thursday, September 20, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP
On-Site Environmental
James Ball Surverying

VISITORS	
Name	*Company*
Joshua Mudrick	Larry's Latrines
Jay Knapp	Short's Oil
Dave Heater	Hertz

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
15 truck loads of aggregate		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions, scope.
1245	Afternoon H & S meeting.
	TESTING PERFORMED: jar test of aggregate fill. (15 loads, all passed)
1330	Daily QA/Progress meeting. *** For details, see meeting notes.***
	Terry LeMasters was the Health and Safety Officer for the day.
1930	Approximately 140' of Infiltration trench constructed.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	The amount of soil being removed from the area of the infiltration trench: more soil is being handled than needs to be, since there are no trucks with gates on them, dry soil is being used at the back of the truck to keep the soil slurry from running out.
	Stock pile has areas which trap the water so that it can not drain. It needs to have the sides sloped in order to facilitate drainage.

DESIGN CONCERNS AND RESOLUTIONS	
	S. Klaus (RE) discussed with Mike V. of Compass Pressure testing requirements and cleanout surface completions of the cleanout pipes.

SUBMITTAL CONCERNS AND RESOLUTIONS	
	None noted

Signature: _____ **Date:** 9/21/07

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/20/07**

Report # **039**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		52	84
Precipitation			
Dom. wind direction	N		
Forecast; Sunny			

Work Performed and Production Rates

Excavate full scale trench 620 ft from north end btm 1477 tos 1487. 655 ft btm 1477, tos 1489. 690 ft btm 1477, tos 1489. 710 ft btm 1477, tos 1489.

Forecasted Work

Continue excavation of full scale trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Working at hieghts	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Stone	Buffalo crushed	480.22	Infiltration trench stone

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Friday, September 21, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
BP
On-Site Environmental

VISITORS	
Name	*Company*
Eric Kurtz	Milton Cat
Fred Isamen Tom Dell	Draper Trucking
Jeff Gordon	Wellsville Water Department
Timothy Cleary	Atlantic Testing Labs
Rick Holtgraver	Dimperir Services
Greg Cole David Crow	National Grid
Brandon Smith	UPS
Dave Heater	Hertz

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
14 loads of aggregate passed jar test.		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions, scope.
1245	Afternoon H & S meeting.
	TESTING PERFORMED:
	Jar test of 14 loads of aggregate fill
	Density testing of W berm of vertical flow wetlands. Test 1: West berm of cell 1, vertical flow wetlands: Depth: approximately 5 ½ feet (original grade): Density: 88.9% Test #2 10' west of test #1, depth of about 4 feet. Density: 88.5% Retested after smoothing with tamping plate: results were 88.3%. Test #3: In roadway, depth of 0 feet, 30 feet northwest of test 2. Density: 89.6% Soil samples from the vertical wetland berm were taken to laboratory for additional Proctor tests. Density testing of bottom of trench between Manholes A and B meter set to several densities, pending actual Proctor results. Nuclear density results were compared to **projected** Proctor results for the trench backfill material.
	Bolt backed out of boom on Cat. 345C excavator. Was down for four hours until a replacement bolt was found in Wellsville.
	Infiltration trench was excavated, aggregate and geotextile was placed a total of 40 feet for the day, between 730 feet from the north end of the trench to 760 feet from the north end of the trench.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	More density testing of the west berm of the vertical flow wetlands did not pass. More soil was taken back to the lab to re-do Proctor test, pending Proctor results from earlier samples.
	The treatment plant's outfall pipe was encountered during excavation of the Infiltration Trench. The pipe separated, and the rubber "Fernco" fitting was re-secured and flow restored. The trench box was dug deeper than usual, the tope was removed, and the box passed under the line.
	National Grid Electric was back to observe the power line (pole) that needs temporary relocation. They were concerned with excavation requirements and crew safety training requirements.

DESIGN CONCERNS AND RESOLUTIONS	
	None noted

SUBMITTAL CONCERNS AND RESOLUTIONS	
	Health and Safety reports for 9/11 to 9/19 received from Compass

Signature: _____ **Date:** 9/27/07

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/21/07**

Report # **040**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		55	85
Precipitation			
Dom. wind direction	N		
Forecast; Sunny			

Work Performed and Production Rates

Excavate full scale trench 730 ft from North end btm 1477, tos 1489. 750 btm 1477, tos 1489. Bolt on excavator broke off, down for 4 hours. Excavating around lines at water treatment plant.

Forecasted Work

Continue excavation of full scale trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Swing radius of excavator	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Stone	Buffalo crushed	457.16	Infiltration trench stone

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

For project Safety information, please see the attached Daily Safety Report
Additional attached items:

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, September 24, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
On-Site Environmental

VISITORS	
Name	*Company*
Jason Pearl	Kenney Trucking
Brenda Grover	Grover's Toilets
Tom Scott Jeff Murray	Fed Ex

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Manhole A, 3 parts. All appear undamaged.		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions, scope, JSA's, permits to work.
1245	Afternoon H & S meeting.
	Excavation of Infiltration Trench from 750 feet from the north end of the trench to 810 feet from the north end of the trench. Trench box was removed, and dragged past manhole C, in order to avoid excavating under overhead wires. Another 20 feet of trench was excavated, but the trench box was pulled and the excavation temporarily backfilled. Excavation between manholes C and D was halted temporarily due to safety concerns, relating to the proximity of a campus building.
	Preparation of sedimentation pond

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	The bedding material for the liner in the sedimentation pond still has rocks in it, and ground water continues to seep into it. There was about 4" of water in the bottom of the sedimentation pond in the morning. Rick Wagner will be in tomorrow to oversee liner installation. Installation crew will also be arriving for safety training.

DESIGN CONCERNS AND RESOLUTIONS	
	With the addition of cleanouts between manholes, there will need to be surface completions of these. RE recommended a threaded removable plug placed in a steel flush mount small diameter removable protective cover set in a 4" to 6" thick 2' x 2' concrete pad flush to the surrounding ground surface. This may require a detailed drawing
	RE suggested changing the gate in the enclosures around the manholes to include an 8' gate rather than a 4' gate, so that a vehicle with a winch could be used to remove a pump if necessary.

SUBMITTAL CONCERNS AND RESOLUTIONS	
	9/17, 9/18, 9/19 DQA reports from Compass returned for completion.
	An email was sent to Terry LeMasters of Compass requesting submittal numbers and cover sheets for all documents which do not have submittal numbers.

Signature: _____ **Date:** 9/27/07

Penelope Padmore
SECOR Engineering, P.C.
QA Official

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Tuesday, September 25, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
Landsaver Environmental
On-Site Environmental

VISITORS	
Name	*Company*
Rick Wagner	Jacques Whitford NAWE
Gerald Smith	Wilkinson Trucking
Jeff Milks	LCW SSS Fencing
Dave Heater	Hertz
Steve Pierce	John's Towing
Jay Knapp	Short's Oil
Tim Cleary	Atlantic Testing Laboratory

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
12 loads of pea gravel (infiltration trench aggregate) – 422.75 tons; all loads passed jar tests		X
4 Rolls of 80 mil textured geomembrane. No damage noted. Rolls were stored in open steel building. Liner was inspected by Rick Wagner and QA official		X
Genie GH-644 Fork lift		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions, scope, JSA's, permits to work.
1245	Afternoon H & S meeting. Scope of work is unchanged. Cover plate on forklift can hide sheared bolts.
	Excavation of Infiltration Trench: Approximately 80 feet south of Manhole C, an excavation 20 feet long was attempted, then the trench box was removed, and the excavation was backfilled.
	Preparation of sedimentation pond
0800	Safety training of liner installation crew from Landsaver Environmental.
1330	Pre installation meeting for more detail, please see meeting minutes
0900	Density conducted by Atlantic Testing Laboratories (ATL): Project specs require 95% of the maximum dry density, as determined by ASTM (D 698/D 1557)

Test Location	Elevation	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
N end of Pond	-1'	5.5	140.0	7.5	135.2	96.6
Pond Btm Surface	-0'	14.5	103.0	6.5	131.9	
100' S MH-A	-10'	11.0	116.5	8.3	120.5	103.4
200' S MH-A	-9'			11.5	123.7	106.2
180' S MH-B	-5'			12.9	116.0	99.6
150' S MH-A	-6'			11.3	116.4	99.9
80' S MH-A	-5'			14.7	114.4	98.2
200' S MH-A	-5'			11.9	122.3	105.0
50' S MH-B	-4'			15.7	114.3	98.1
50' S MH-B	-4'			11.9	112.1	96.5
80' S MH-A	-5'			16.9	110.6	95.0
70' N MH-B	-3'			13.3	118.3	101.5

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Subsurface for pond liner does not meet specifications. There is standing water in sedimentation pond basin and rocks greater than 1' diameter in the subsurface material.
	The excavation of the trench next to the SUNY Trades building was (South of MH-C) was temporarily stopped because of the instability of the trench. The excavation was temporarily backfilled; the excavation will continue when the soils stability issue is addressed.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
	Emailed Terry LeMasters, indicating that we need the liner lot testing certification, and resumes for the installation crew.
	Rick Wagner from NAWE also asked for the pipe elevations in the area of the sedimentation pond.

Signature: Stephanie L. Andrews for

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Date: 11/01/2007

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/25/07**

Report # **042**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		53	84
Precipitation			
Dom. wind direction	N		
Forecast; Sunny			

Work Performed and Production Rates

Excavate full scale trench starting 85 ft from manhole C btm 1477, tos 1490. 105 ft from manhole C btm 1477, tos 1490. Compaction testing of sed pond and full scale trench.

Total of 4 loads haul to soil staging area.

Forecasted Work

Continue excavation of full scale trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Proper lifting	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Material type	Vendor	Quantity	Purpose
Infiltration trench stone	Buffalo Crushed	422.75	Infiltration trench

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Wednesday, September 26, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
Landsaver Environmental
On-Site Environmental
James Ball Surveryors

VISITORS	
Name	*Company*
Rick Wagner	Jacques Whitford NAWE
Brad Thomson, Mayor	Village of Wellsville
Fred Eisman John Mest Randy Wende John Draper Eugene Murphy Jeff Hitchcock	Howgen
Ron Gallipeau	Varitek
Jared How	Atlantic Testing
Doug Reed Jeff Colbert	Reed & Colbert Electric
Roy Proffrock	Estes Trucking

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
16 loads of pea gravel (infiltration trench aggregate) – 498.20 tons; all loads passed jar tests		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions, scope, JSA's, permits to work.
1245	Afternoon H & S meeting.
	Preparation of sedimentation pond – removing stones, using plate compactor and roller-compactor. Roller-compactor use was abandoned, because it left deep tire tracks, which then had to be smoothed out.
	Installation of sedimentation pond liner. Cutting and laying out of panels, a few seams were done, and field seam tests were performed. All tested seams passed.
	Excavation of Infiltration Trench- from 200 feet south of Manhole C to 240 feet south of Manhole C.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1430	Work on the sedimentation pond liner installation stopped due to rain. More storms likely today and tomorrow.
	Approximately 85 feet south of Manhole C, a storm sewer which had not been previously identified was encountered. This was located 10-20 feet north of where a line was expected to be encountered.
	Compass continues to indicate that they expected the excavation of the Infiltration Trench to take place more rapidly. The aggregate fill is 8', the soil has higher fines content, and the base is now at an elevation of 1482 instead of 1477. The Trench is now being excavated 240 feet south of Manhole C where fence removal and some clearing and grubbing are required.
	Vertical wetlands compaction testing: Changing the method of excavation has not resulted in passing density testing. Results of the latest set of Proctors have not yet been received.

DESIGN CONCERNS AND RESOLUTIONS	
	RE Stuart Klaus is leaving the site, and Srinivas Kappagantula will be taking over as Resident Engineer beginning 9/27/07.

SUBMITTALS	
Returned	044 (pipe testing plan) for editing.
Received	Cover sheets/submittal numbers for several documents missing submittal numbers

Received	Revised daily reports for 9/17-9/20.
Received	Testing certification on 80 mil liner
Received	Resumes for liner installation crew.
Received	Field seam test results
Received	
060 Received	Electrical components

Signature: Stephanie L. Andrew, for

Date: 11/01/2007

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/26/07**

Report # **043**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	55	76
Precipitation		
Dom. wind direction	N	
Forecast; Rain		

Work Performed and Production Rates

Excavate full scale trench starting 200 ft from manhole C btm 1482, tos1490. 220 ft from manhole C btm 1482, tos 1490. Compaction testing on trench, results attached.

Total of 6 loads haul to soil staging area.

Forecasted Work

Continue excavation of full scale trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Proper rigging	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Material type	Vendor	Quantity	Purpose
Infiltration trench stone	Buffalo Crushed	498.20	Infiltration trench

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Thursday, September 27, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
Landsaver Environmental
On-Site Environmental
James Ball Surveyors

VISITORS	
Name	*Company*
Craig Clark John Buckwalter Jim Jerla	Alfred State College
Tim Cleary	Atlantic Testing Labs
John Hardy	Vantage Equipment
Aaron Frame	Hertz
Art Roberts William Faughnan	Art Roberts Masonry

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
One truckload of wetlands fill – 36.86 tons		X
Manhole B delivered. QA official inspected. Measurements within specifications		X
One truckload of pea gravel (Infiltration Trench aggregate) – 35.86 tons		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions, scope, JSA's, permits to work.
1245	Afternoon H & S meeting.
	Preparation of sedimentation pond- adding wetland fill material and excavating areas of saturated soil in the northern end of the basin.
	Excavation of Infiltration trench: From 240 feet south of Manhole C to approximately 290 feet south of Manhole C.
1330	Weekly QA meeting for more detail, see meeting minutes.
	Art Roberts Mansonry representatives were on site to investigate the Cascade Aerator, in order to prepare a bid on the project. The bid is expected on Monday.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Substantial concrete structures, possibly building foundations, encountered by excavator while excavating trench. One of the structures, possibly the foundation of a building ran parallel to, and within the Infiltration trench.
	Rain continued on and off throughout the day. Rain is also predicted for tomorrow.
	Liner installation supervisor, Vong Naravong was on site, inspected the sedimentation pond. Moisture is still an issue.

DESIGN CONCERNS AND RESOLUTIONS	
	Sedimentation Pond Liner: Wetlands fill is being used to supplement the liner subgrade. At the northern end of the pond, saturated soil is being removed and fill emplaced. Heavy rain overnight has washed away finer grained material, exposing rocks in the embankments. The fill will be used along the embankments to cover areas where the rocky material has been exposed.

SUBMITTALS	
Received	Weekly report from Compass, for the week of 9/17- 9/21.
Received	Agenda for weekly meeting
Received	Surveyor's log.

Signature: Stephanie L. Andrews, for **Date:** 11/01/2007

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/27/07**

Report # **044**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	52	73
Precipitation		
Dom. wind direction	NW	
Forecast; Rain		

Work Performed and Production Rates

Excavating full scale trench. 240 ft South of manhole C btm 1482, tos 1490. 260 ft South of manhole C btm 1482, tos 1490. 280 ft South of manhole C btm 1482, tos 1490.

Total of 30 loads haul to soil staging area.

Forecasted Work

Continue excavation of full scale trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Fall protection	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

*Material Deliveries

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Friday, September 28, 2007

SECOR

PARTIES ON SITE
SECOR International Incorporated
Compass Environmental Inc.
On-Site Security
On-Site Environmental
James Ball Surveyors

VISITORS	
Name	*Company*
Marty Brehm Randy Wende	Howgen
Craig Martin	Shorts
Jason Jeffers	Ramsco
Jeremy Chilson	Vitale
Jeff Murray	Fed Ex
John Hardy	Vantage Equipment

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Wetlands fill- 2 truckloads		X

DAILY ACTIVITIES AND MEETINGS	
0700	Daily H & S meeting. Agenda, precautions, scope, JSA's, permits to work.
1245	Afternoon H & S meeting.
	Excavation of Infiltration trench – 225 south of manhole D to south of feet south of Manhole D
	Excavation was moved to 225 feet south of Manhole D. A jackhammer is going to be used to dismantle concrete structures in the subsurface. Old site photographs show that in the area where the structures were encountered was the power building for the refinery, along with concrete structures which connected the power building with a dam on the Genesee River, to the east. One of the structures runs parallel and inside the Infiltration Trench for approximately 50 feet.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1545	Thunderstorms moved into the area. Work resumed at approximately 16:15. Work ended at 17:30.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS	
	Atlantic Testing Laboratories soil report
	Daily report for 9/26
061	Soil Staging area liner
046	As- builts, Sedimentation Pond (hardcopies and CD's)

Signature: Stephanie L. Andrews, for **Date:** 10/01/2007

Penelope Padmore
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **9/28/07**

Report # **045**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	50	74
Precipitation		
Dom. wind direction	NW	
Forecast; Rain		

Work Performed and Production Rates

Excavating full scale trench. 250 ft from manhole D btm 1482, tos 1490. 270 ft btm 1482, tos 1490. 290 ft btm 1482, tos 1490. 310 ft btm 1482, tos 1490. 330 ft btm 1482, tos 1490. Moved to the South to get away from concrete structures. Ordered breaker for excavator to remove concrete. Found another storm drain that wasn't supposed to be there.

Continue to haul dirt to North end of trench, no room to stockpile near the trench because the trench is much wider than anticipated (out of scope). Also out of backfill on North end.

Total of 42 loads haul to soil staging area.

Forecasted Work

Continue excavation of full scale trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Slips trips and falls	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose
Sand	Buffalo Crushed	70.82 tons	Sand for sediment pond.

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, October 1, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW / SSS Fencing
James Ball Land Surveyor
Landsaver

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Brenda Grover	Grover Toilets
Jared Howe	Atlantic Testing

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
NONE		

DAILY ACTIVITIES
Install and weld together Geomembrane liner in Sedimentation Pond
Replace fencing along Brooklyn Avenue near the Sedimentation Pond
Backfill and compact anchor trench around the Sedimentation Pond
Clearing and grubbing of Infiltration Trench to the south of Manhole E
Excavated 160 feet of the Infiltration Trench 210 feet south of Manhole E
Backfill Infiltration Trench with aggregate stone
Place Geotextile liner over aggregate stone

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Ground Disturbance, Hot Work and Working at Heights. • Review JSAs. • Beware of local drivers.
H & S Meeting at 12:45 PM • No changes to construction activities. • The hot work permit is no longer needed. • UV index is at a 6. Apply sunscreen as needed.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
0950	Jim Ball surveyed the northern most portion of the infiltration trench including the foundation encountered between Manhole C and Manhole E. The foundation that was encountered last week is located approximately 197.7 feet south of Manhole C and spans approximately 213.5 +/- feet, in the vicinity of Manhole D. Equipment is expected to arrive tomorrow to tear down the foundation wall.
1448	While excavating the infiltration trench (about 25 feet to the south of Manhole E), the back brick wall of the Masonry building – belonging to SUNY – began to collapse. Compass immediately stopped excavating and began to backfill the trench in order to support the foundation and the outside wall. The RE verified that the building was empty and that no one was in the vicinity of the building. The Health and Safety Officer was called out to the Site and the building was roped off with yellow caution tape. A structural engineer will need to be brought in to determine if the building can be occupied or not. Until then, SUNY was instructed not to use the building.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	*Submittal 054 – Monitoring Well Installation and Testing* still reads "0.010 slot schedule 40 PVC well screen." This should be changed to read "0.020 slot schedule 40 PVC well screen." Although this was addressed and changed on the Piezometer Plan (Submittal 043), Terry LeMasters has been notified to make the appropriate change to this particular submittal as well.
2	Still awaiting (DURING INSTALLATION Specification 02661, Section 1.3): • Subgrade acceptance certification signed by the Installer • Repair documentation • Field seam test results

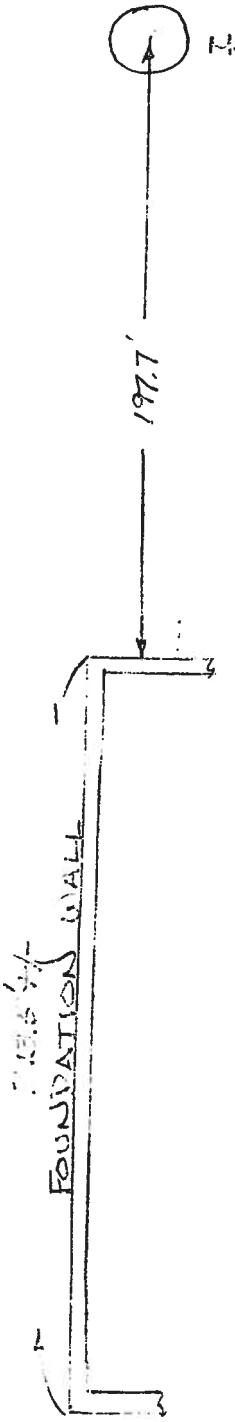
SUBMITTALS RECEIVED	
1	(2) Melt Index Test results and (2) Density Test results for each Lot of Geomembrane liner received – Specifications 02661

Signature: Stephanie L. Andrews _____ **Date:** _____

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

CONCRETE FOUNDATION
SPECS FROM JIM BALL.

10/01/2007



Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/1/07**

Report # **046**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	48	75
Precipitation		
Dom. wind direction	NW	
Forecast; Sunny		

Work Performed and Production Rates

Excavating full scale trench. 350 ft South of manhole D btm 1482, tos 1490. 25 ft South of manhole E btm 1482, tos 1490. 45 ft btm 1482, tos 1490. 65 ft btm 1482, tos 1490. 150 ft South of manhole E btm 1482, tos 1490. 170 btm 1482, tos 1490. 190 btm 1482, tos 1490. 210 btm 1482, tos 1490. 230 ft btm 1482, tos 1490.

While excavating near the completion of the trench along the back of the attached, abandoned masonry building a portion of the lower wall separated. At beginning of day the excavator encountered another unmarked storm sewer line. Continued hauling upper 10 ft of trench material to north end (out of scope).

Excavated 180 feet of full scale trench today.

Total of loads haul to soil staging area.

Forecasted Work

Continue excavation of full scale trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Eye contact with operators.	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Visitors

Name	Company	Purpose of Visit

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Shipped Offsite			

*Material Deliveries			
Material type	Vendor	Quantity	Purpose

*Equipment used	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

*Submittals	Transmittal	Section	Subsection	ID

*Analytical Data	Sample ID	Type	Number of Pages	Provider

*Erosion Control	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Tuesday, October 2, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW / SSS Fencing
Landsaver

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Kevin Glaser	NYSDEC
Jim Jerla	Alfred State College
Fred Eisaman	Howgen
John Mest	Howgen
Greg Nickerson	Howgen
Randy Wende	Howgen
John Payne	Howgen
Jack Rice	Howgen
Tom Swift	Clark Patterson

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
18 loads of pea gravel (trench aggregate) – 530.32 tons		X

DAILY ACTIVITIES
Weld Geomembrane liner in Sedimentation Pond
Install top bar and barb wire on fencing that was installed yesterday along Brooklyn Avenue
Backfill and compact anchor trench (in 12" lifts) around the Sedimentation Pond
Cut and fill Surface Flow Wetlands Cell 1, beds 1 and 2
Excavate Infiltration Trench for a total of 200 feet South of Manhole E
Backfill Infiltration Trench with aggregate stone
Place Geotextile liner
Lay first lift of native backfill in excavated portion – 200 feet South of Manhole E – Infiltration Trench

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Ground Disturbance, Hot Work and Working at Heights.
- Review JSAs.
- Workers were reminded to clean up the garbage laying around the Site

H & S Meeting at 12:45 PM

- No changes to construction activities.
- BP Lesson Learned – Diving Incident
- Adam reminded everyone to wear the appropriate hand protection when applicable.
- A designated entry/observation point was made for those visiting the trench. The entrance will be north of the Masonry buildings and observation points will be to the north of the infiltration trench.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1500	A structural engineer was called on-site by Compass to assess the condition of SUNY's Masonry building. The engineer recommended disconnecting utilities in the portion of the building damaged; isolating the damaged area from the remainder of the building; and supporting the roof of the damaged portion of the building prior to reoccupying the remainder of the building.
1500	While excavating the infiltration trench, an issue arose regarding the total distance and the number of trench box pulls – the actual excavated length does not meet operator's measurements/readings. After evaluating the situation, it was determined that the Compass operator missed the first reading of the day.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	Terry LeMasters was notified regarding the status of the following Geomembrane liner submittals: *Specification 02261-5* • Repair Documentation • Subgrade acceptance certification *Specification 02661-16* • Field Seam Test results • Log every 2 hours: o Ambient temp measured 6" above Geomembrane surface o Extrudate temps I barrel and at nozzle o Operating temp of hot wedge o Operators name

SUBMITTALS RECEIVED	
	NONE

Signature: Stephanie L. Andrews

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Date: 10/04/2007

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/2/07**

Report # **047**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	49	73
Precipitation		
Dom. wind direction	NW	
Forecast; Sunny		

Work Performed and Production Rates

Excavating full scale trench. 250 ft South of manhole E btm 1482, tos 1490. 270 ft btm 1482, tos 1490. 290 ft btm 1482, tos 1490. 310 ft btm 1482, tos 1490. 330 ft btm 1482, tos 1490. 350 ft btm 1482, tos 1490. 45 ft South of manhole F btm 1482, tos 1490. 65 ft btm 1482, tos 1490. 85 ft btm 1482, tos 1490. 105 ft btm 1482, tos 1490.

Tom Swift with Clark Patterson and Associates on site @ 10:00 to look at building. Khaled with CDM had issue with Shane's notes compared to actual length of trench, explained that Shane forgot to document first pull of morning. Liner crew welding seams in bottom of pond first then working up sides in case of rain. Received stone for infiltration trench.

ATL on site taking compaction tests of trench by water treatment plant, moisture to high.

Excavated 200 feet of full scale trench today.

Total of 150 loads haul to soil staging area.

Forecasted Work

Continue excavation of full scale trench. Prepare sed pond for liner.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
3 points of contact	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Visitors		
Name	Company	Purpose of Visit

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Shipped Offsite**

***Material Deliveries**

Material type	Vendor	Quantity	Purpose
Infiltration trench stone	Buffalo Crushed	530.32	Infiltration trench

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Wednesday, October 3, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW / SSS Fencing
Landsaver
James Ball, Land Surveyor

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Roy Struble	Roy Struble Truck
Vine Lucas	Roy Struble
Fred Eisaman	Howgen
John Mest	Howgen
Greg Nickerson	Howgen
Randy Wende	Howgen
Ron Draper	Howgen
Jack Rice	Howgen
Jared Howe	Atlantic Testing
Chris Preischel	Preischel Bros Tires
Aaron Frame	Hertz
Bill Byers	Hertz
Dave Heater	Hertz
Jeff Culbert	Reed Culbert Electric
Craig Martin	Shorts
Al Swleonski	Maybe

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
18 loads of pea gravel – 530.32 tons; all loads passed jar tests		X

DAILY ACTIVITIES
Weld Geomembrane liner in Sedimentation Pond – Liner Installation is complete
Install top bar and barb wire on fencing that was installed yesterday along Brooklyn Avenue
Backfill and compact anchor trench (in 12" lifts) around the Sedimentation Pond
Partially cut and fill Surface Flow Wetlands Cell 2, bed 1
Excavated 126 feet of the Infiltration Trench south of Manhole F to approximately 40 feet north of Manhole G
Backfill Infiltration Trench with aggregate stone
Place Geotextile liner
Lay first lift of native backfill over Geotextile liner
Decon 250D John Deere haul truck
Mix fly ash with excavated soil in the soil staging area and at the northern most portion of the Site. Fly ash at the northern portion of the Site was placed in the Infiltration Trench between Manhole A and Manhole B at -3' and -2' below the ground surface elevation.
Lay poly liner in the soil staging area
Transport excavated soil from Infiltration Trench – approximately 74 feet south of Manhole F – to Infiltration Trench at Manhole A to be used as backfill
Density conducted by Atlantic Testing Laboratories (ATL) along the anchor trench at the Sedimentation Pond: Project specs require 90% of the maximum dry density, as determined by ASTM (D 698/D 1557)

Test Location	Elevation	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
5' E P-3,85	-8"	14.5	103.0	9.4	97.4	95
10' W P-7, 45				14.0	100.6	98
10'W P-10, 40				15.9	101.2	98

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Ground Disturbance, Hot Work and Working at Heights • Review JSAs. • Review fly ash dangers, precautions, PPE and first aid
H & S Meeting at 12:45 PM • No changes to construction activities. • BP Major Incident Announcement (MIA) – Fatality caused by malfunctioning fire extinguisher • Reminder to workers to wear the appropriate gloves

	SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS
1512	Compass will pull the trench box 18 feet with two feet of overlap. Red spray paint will be used to designate 18-foot intervals.
	Encountered South Storm Sewer line (roughly 36" diameter) approximately 120 feet south of Manhole F.

	DESIGN CONCERNS AND RESOLUTIONS
	NONE

	SUBMITTAL CONCERNS AND RESOLUTIONS
1	*ALL* documentation specified in Specification 02661 – Geomebrane Liners is to be installed at the end of the day. Terry LeMasters was notified immediately following the H & S meeting.

	SUBMITTALS RECEIVED
1	Received Daily Health and Safety Reports for 09/26, 09/27, 09/28, 10/01 and 10/02
2	Geomembrane Liner documentation
3	BOL's for pea gravel (Infiltration Trench aggregate)
4	Atlantic Testing Laboratories documentation
5	Daily QA Repot for 10/02

Signature: Stephanie L. Andrews **Date:** 10/05/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/3/07**

Report # **048**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		55	78
Precipitation			
Dom. wind direction	N		
Forecast; Sunny			

Work Performed and Production Rates

Excavating full scale trench. 105 ft South of manhole F btm 1482, tos 1490. 123 ft btm 1482, tos 1490. 139 ft btm 1482, tos 1490. 157 ft btm 1482, tos 1490. 175 ft btm 1482, tos 1490. 193 ft btm 1482, tos 1490. 211 ft btm 1482 tos 1490. 2 elevation shots per pull.

2 loads of fly ash delivered in morning, one on north end by staging area and other on South end by water treatment plant. Instructed by Secor to overlap pulls by 2 ft. Compass mixing fly ash and high piling soils amended in staging area.

ATL did compaction testing of anchor trench at sed pond. Liner crew finished at 5:30 pm.

Forecasted Work

Continue excavation of full scale trench. Continue backfill of full scale trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Pinch points	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Name	Company	Purpose of Visit

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Shipped Offsite			

*Material Deliveries			
Material type	Vendor	Quantity	Purpose
Infiltration trench stone	Buffalo Crushed	533.26	Infiltration trench

*Equipment used	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

*Submittals	Transmittal	Section	Subsection	ID

*Analytical Data	Sample ID	Type	Number of Pages	Provider

*Erosion Control	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Thursday, October 4, 2007

SECOR

PARTIES ON SITE
BP/Atlantic Richfield
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Jared Howe	Atlantic Testing

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
4 Sections of Manhole C		X

DAILY ACTIVITIES

Excavated 126 feet of the Infiltration Trench south of Manhole F (To date, approximately 1612 feet of the Infiltration trench has been completed)

Backfill 126 feet of the excavated Infiltration Trench south of Manhole F with aggregate stone

Place 126 feet of Geotextile liner over the aggregate stone south of Manhole F

Lay the first lift of native backfill over the 126 feet of Geotextile Liner

Intermixing fly ash with excavated soil in the soil staging area and northern portion of the Site

Infiltration Trench located to the north of Manhole A has been completely filled and all lifts passed Atlantic Testing Laboratories' (ATL) standard proctor tests

Transport excavated soil from Infiltration Trench – approximately 229 feet south of Manhole F – to Infiltration Trench at Manhole A and Manhole B to be used as backfill

Density conducted by Atlantic Testing Laboratories (ATL) along the Infiltration Trench (locations listed below):

Project specs require 90% of the maximum dry density, as determined by ASTM (D 698/D 1557)

Test Location	Elevation	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
103' N MH-A	-3'	11 ± 3	116.6	14.0	112.4	96
90' N MH-A	-2'			13.3	109.4	94
60' N MH-A	-1'			12.4	108.4	93
50' N MH-A	0			11.2	107.5	92
100' S MH-A	-2'			9.1	105.9	91

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Ground Disturbance, Hot Work, Confined Space and Working at Heights
- Review JSAs.
- Review fly ash dangers, precautions, PPE and first aid

H & S Meeting at 12:45 PM

- No changes to construction activities.
- BP Health and Safety pamphlets were handed out

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS

0930	The Infiltration trench spanning Manhole B to Manhole C failed the standard proctor test a number of times. A lift of soil was removed and additional fly ash was added to top lifts of soil located between Manhole B

	and Manhole C in order to aid in drying and provide better compaction.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	An updated list of overdue/missing submittal, submittals received with variances or outstanding issues and missing BOL's was given to Terry LeMasters.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	*Submittal 062:* Weir Gates
2	Atlantic Testing Laboratories documentation
3	Daily QA Repot for 10/03

Signature: Stephanie L. Andrews **Date:** 10/09/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/4/07**

Report # **049**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		51	77
Precipitation			
Dom. wind direction	N		
Forecast; Sunny			

Work Performed and Production Rates

Excavating full scale trench. 229 ft South of manhole F btm 1482, tos 1489. 247 ft btm 1482, tos 1489. 265ft btm 1482, tos 1489. 283 ft btm 1482, tos 1489. 301 ft btm 1482, tos 1489. 319 ft btm 1482, tos 1489. 337 ft btm 1482, tos 1489. 355 ft btm 1482, tos 1489.

ATL did compaction testing of trench.

Forecasted Work

Continue excavation of full scale trench. Continue backfill of full scale trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Heat stress	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Friday, October 5, 2007

SECOR

PARTIES ON SITE
BP/Atlantic Richfield
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
John Armstrong	BP/Atlantic Richfield
Dan Hardisty	BP/Atlantic Richfield
Patricia Gallery	BP/Atlantic Richfield
Jared Howe	Atlantic Testing
Sean Munrick	Larry's Latrines
Brandon Smith	UPS
David Smith	Bama Truck Line
Bill Byers	Hertz
Charles Baker	Vitale Trucking

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
ICON equipment	X	
Hertz roller (not working properly)	X	
Hertz roller		X
Volvo haul truck with tailgate		X

DAILY ACTIVITIES
Excavated 108 feet of the Infiltration Trench south of Manhole G to approximately 47 feet north of the Pilot Trench overlap
Backfill the remaining 25 feet of the Infiltration Trench that was excavated yesterday (October 4, 2007) with pea gravel (aggregate stone) as well as the 108 feet of Infiltration Trench excavated today – roughly 47 feet shy of the Pilot Trench overlap
Place approximately 30 feet of Geotextile liner over the aggregate stone in the remaining portion of the Infiltration Trench north of Manhole G that was poured today. One hundred and eight feet of Geotextile fabric was also added south of Manhole G to approximately 47 feet north of the Pilot Trench above the aggregate stone poured today
Lay first lift of native backfill over Geotextile liner in the remaining portion of the Infiltration Trench excavated yesterday, north of Manhole G, and the portion of the trench excavated today, 108 feet south of Manhole G
Intermixing fly ash with excavated soil in the soil staging area
Transport fly ash infused soil from the soil staging area to Infiltration Trench between Manholes B and F. Fly ash infused soil was placed in lifts -6', -5', -4', -3' and -2' north of Manhole E; lifts -4', -3' and -2' south of Manhole E; and lifts -3' and -2' north of Manhole F. Lifts -1' and 0' north of Manhole C, north and south of Manhole E and north of Manhole F were backfilled with native soils.
Install Manhole components into Manhole A and Manhole B
Density conducted by Atlantic Testing Laboratories (ATL) along Infiltration Trench (see below for testing locations): Project specs require 90% of the maximum dry density, as determined by ASTM (D 698/D 1557)

Test Location	Elevation	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
150' N MH-C	0	11 ± 3	116.5	11.4	108.0	93
100' N MH-E	-6'			11.5	107.9	93
40' N MH-E	-5'			11.6	104.6	90
70' N MH-E	-4'			11.9	109.0	94
150' N MH-E	-3'			12.6	110.3	95
20' N MH-E	-2			11.1	109.9	94

200' S MH-E	-4'			12.0	110.1	94
50' N MH-F	-3'			12.2	110.3	95
150' S MH-E	-2'			13.5	109.0	94

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights, Confined Space and Ground Disturbance. • Review JSAs.
H & S Luncheon at 12:00 PM • No changes to construction activities • UV index is at a 5. Remember to apply sunscreen. • Watch out for yellow jackets.
Weekly Progress Meeting at 1:13 PM • No safety issues • Work performed • Work projected for next week • Schedule – roughly 14 days behind • Open Items • ***For more details see Weekly Progress Meeting Minutes***

	SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS
	NONE

	DESIGN CONCERNS AND RESOLUTIONS
	NONE

	SUBMITTAL CONCERNS AND RESOLUTIONS
1	The list of overdue/missing submittal, received submittals with outstanding issues and BOL's yet to be received was reiterated at the Weekly Progress Meeting.

	SUBMITTALS RECEIVED
1	*Submittal 063:* 8-Way Splitter Structure
2	*Submittal 064:* Hydraulic Control Splitter

Signature: Stephanie L. Andrews **Date:** 10/09/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/5/07**

Report # **050**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		55	80
Precipitation			
Dom. wind direction	N		
Forecast; Sunny			

Work Performed and Production Rates

Excavating full scale trench. 45 ft South of manhole G btm 1482, tos 1489. 63 ft btm1482, tos 1489. 81 ft btm 1482, tos 1489. 99 ft btm 1482, tos 1489. 117 ft btm 1482, tos 1489. 135 ft btm 1482, tos 1489. 153 ft btm 1482, tos 1489.

ATL did compaction testing of trench.

Forecasted Work

Continue excavation of full scale trench. Continue backfill of full scale trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Slips, trips, and falls	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, October 8, 2007

SECOR

PARTIES ON SITE
BP/Atlantic Richfield
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
James Ball Land Surveying

VISITORS	
Name	***Company***
Fred Eisaman	Howgen
Josh Mest	Howgen
Tom Noel	Howgen
Jeff Pixely	Howgen
Ron Giroux	Howgen
Marty Brehm	Howgen
Thomas Dell	Howgen
Ron Draper	Howgen
Tim Cleary	Atlantic Testing
Joe Fletcher	Fletcher Trucking
Bill Polle	Con Way Express
Marvin Grover	Grover Toilers
Chad Weber	Rochester Equipment
Jeff Murray	FedEx

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
15 loads of pea gravel (Infiltration Trench aggregate) – 525.03 tons; all passed jar test		X
Section 1 thru 3 of Manhole D		X
Section 4 of Manhole E		X
CAT Model H140CS	X	

DAILY ACTIVITIES

Excavated approximately 47 feet north of Manhole G to the Pilot Trench overlap

Backfilled 47 feet of the Infiltration Trench, excavated today, with pea gravel (aggregate stone), north of Manhole G

Place approximately 55 feet of Geotextile liner over the aggregate stone spanning from Manhole G to the Pilot Trench

Transport fly ash blended soil from the soil staging area to the Infiltration Trench – to the north of Manhole G – to be used as backfill. Lifts were completed south of Manhole F and north of Manhole G. Lifts -6', -5', -4', -3', and -2' south of Manhole F and lifts -6', -5', -4' and -2' north of Manhole G contained fly ash.

Density conducted by Atlantic Testing Laboratories (ATL) along Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
75' S MH-F	-5'	11 ± 3	116.5	9.2	120.6	88.7
150' S MH-F	-6'			8.0	118.5	87.1
80' N MH-G	-6'			9.1	118.5	87.9
80' S MH-F	-4'			10.6	124.7	91.7
120' N MH-G	-6'			7.3	124.2	91.3
90' N MH-G	-6'			9.1	128.3	94
70'S MH-F	-3'	7.0	136.0	10.6	125.2	92.1
150' N MH-G	-5'			9.4	127.3	95.6
100' N MH-G	-5'			9.7	127.7	93.9
45' S MH-F	-2'			9.1	126.0	92.6

115' N MH-G	-4'			9.7	128.6	94.5
95' N MH-G	-4'			8.8	128.1	94.2
60' S MH-F	-1'			10.5	122.5	90.1
110' S MH-F	-3'			9.1	127.4	93.7
120' N MH-G	-2'			9.6	123.3	90.7

Excavate soils behind Current Controls for the installation of Manhole A

Haul excavated soils from Manhole A to the soil staging area

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space and Ground Disturbance.
- Review JSAs.

H & S Meeting at 12:45 PM

- No changes to construction activities
- Distribute safety articles regarding OSHA related incidents

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS

1530	The excavation for Manhole A (MH-A) installation was dug using a trench box with two open sides, because of which lot of soil caved in while excavating to the required elevation. The sides of the excavation were very unstable with big soil masses from the sides falling into the excavation very often. Once the target installation elevation was achieved, an attempt was made to lift and install Sections 1 and 2 of MH-A (connected prior to installation) with the excavators 345C L and 330 D. This was done to avoid the situation where the Section 1 (lower section) of MH-A will be submerged under water, which will inhibit the installation of Section 2. According to product manuals of 345C L and 330 D a maximum load of approximately 16000 lbs can be lifted with both the excavators, while both sections of MH-A put together weighed approximately 21000 lbs. Hence, from a safety point of view, the installation was ceased at 18: 15.

DESIGN CONCERNS AND RESOLUTIONS

	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS

1	*Submittal 063* (Dosing Siphon) does not indicate the use of Styrofoam insulation to be used around the pipes and top half of the dosing siphon structure as indicated on SECOR drawings. Verify that the manufacturer and Compass are aware of this. Also, the type of seal to be used around the inlet and outlet pipe is not specified on the submitted shop drawing.
2	*Submittal 064* (8-Way Splitter Structure): Widths of inner cells of the Plan View (36 3/8", 36 1/4" and 36 1/8") are different from SECOR drawings (3-36"). Short divider walls on the Plan View read 36 1/8", SECOR plans indicated that the cells should be 36". Also, the submitted drawing needs to specify that the "L" bracket has a thickness of 3/16"
3	Submittal 065 (Hydraulic Control Splitter): Width of the inner cells of the Plan View (36 3/8", 36 1/4" and 36 1/8") are different from our plans (3-36"). The short divider walls on the Plan View read 36 1/8", SECOR plans indicated that the cells should be 36".

SUBMITTALS AND MISC. DOCUMENTS RECEIVED

1	*Submittal 063:* 8-Way Splitter Structure
2	*Submittal 064:* Hydraulic Control Splitter
3	Atlantic Testing Laboratories documentation for testing conducted on Friday, October 5, 2007
4	Machine Receipt for CAT Model H140CS removed from the Site on October 8, 2007
5	BOL for Calciment (Fly Ash) received October 03, 2007
6	BOL for 16-24" Class 3 Concrete Pipe (8') via RAMSCO received on September 28, 2007
7	BOL for 8-72" Diameter Circles received on September 21, 2007
8	BOL for four sections of Manhole A and 6 rolls of 1 ¼" Conseal received on September 24, 2007
9	BOL for four sections of Manhole B and 6 rolls of 1 ¼" Conseal received on September 28, 2007

10	BOL for three (3) rolls of Geotextile via FedEx received August 10, 2007
11	BOL for two (2) pieces of Fiberglass grating via Estes received on September 26, 2007
12	BOL for BDL Pipe and PLT PVP Pipe Fittings via Nason's Delivery, Inc. received on September 25, 2007
13	BOL for three (3) rolls of Geotextile via Land Air Express received on September 14, 2007
14	BOL for Manhole box via Mabey received on October 03, 2007

Signature: Stephanie L. Andrews **Date:** 10/11/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/8/07**

Report # **051**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		56	82
Precipitation			
Dom. wind direction	N		
Forecast; Sunny			

Work Performed and Production Rates

Excavating full scale trench. 171 ft South of manhole G btm 1482, tos 1489. 189 ft btm 1482, tos 1489. 197 ft btm 1482, tos 1489. Tied trench into North end of pilot trench.

ATL did compaction testing of trench.

Forecasted Work

Excavation for manhole A. Continue backfill of full scale trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Working at hieghts	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Deliveries			
Material type	Vendor	Quantity	Purpose

*Equipment used	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

*Submittals	Transmittal	Section	Subsection	ID

*Analytical Data	Sample ID	Type	Number of Pages	Provider

*Erosion Control	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Tuesday, October 9, 2007

SECOR

PARTIES ON SITE
BP/Atlantic Richfield
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
James Ball Land Surveying

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Jay Knapp	Shorts
Paul Delong	Verizon
Todd Estabrook	Verizon
Scott Trail	Milton Cat
Roger Fanton	Fanton Clay
Jeff Murray	FedEx
Mark Kellner	Kellner Trucking
Bill Dibble	Legislator

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
NONE		

DAILY ACTIVITIES

Install sections 1 and 2 of Manhole A (see Site/Construction Concerns and Resolutions below for more details)

Break ± 213.5-foot concrete wall located between Manhole D and Manhole E

Place 12" loose (8" compacted) lifts north and south of Manhole G and north of Manhole H

Density conducted by Atlantic Testing Laboratories (ATL) along Infiltration Trench and Vertical Wetlands (see below for locations):

Project specs require 90% (for trench area) and 95% (for wetlands area) of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
150' N MH-H	-5'	7.0	136.0	7.1	124.7	91.7
85' N MH-G	-1'			9.9	126.7	93.2
130' N MH-G	-1'			9.9	127.6	93.9
130' S MH-G	-5'	11.0	116.5	9.6	111.6	95.8
120' N MH-H	-4'			9.2	116.7	95.0
130' N MH-H	-3'			9.4	111.4	95.6
S bank of S most cell approx. 25' E of SW corner	-4'	7.0	136.0	7.9	131.5	96.7

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space and Ground Disturbance.
- Review JSAs.
- Review stop work authority
- Everyone on Site was reminded to be careful before sunrise and after sunset

H & S Meeting at 12:45 PM

• No changes to construction activities • Reminder to workers to keep hydrated

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
0815	Compass is not submitting the correct number of tests per lift per manhole of the Infiltration Trench. SECOR QA Official spoke with Jerry Resnik and Terry LeMasters and reminded them that testing should be conduct in 12" loose lifts (compacted to 8") once per lift for every 500 feet. Jerry Resnik stated that he relayed this information to the dozer operator and he would take care of it.
1000	Compass reviewed the loading capacities of the excavators (345C L and 330D) and confirmed that it is safe to lift up to 32,000 lbs with the excavator 345C L. Once, the required installation elevation for base of MH-A (1474.35) was reached, an attempt was made to install MH-A with both excavators. MH-A could not be installed because it started floating. During the second and third attempts to install MH-A, the corrugated HDPE pipe was pulled apart from the grouted fitting and the manhole kept floating. The 10' diameter steel pipe was then installed inside the manhole trench box and water was pumped out of this steel pipe using the bucket of the excavator. Approximately 5 feet of water was pumped out. The weight of water and soil outside the steel pipe was exerting a downward pressure sufficient to make the water from outside the steel pipe to run into the steel pipe underneath it. Hence, water was pumped out of the steel pipe only to a certain point where water did not infiltrate from underneath the steel pipe. At this equilibrium stage, there was approximately 4-5 feet of water inside the steel pipe. A fourth attempt was made to install MH-A, this time one section at a time, as the top of the lower section did not submerge under water (due to pumping water out of steel pipe). However, the manhole kept floating. It was decided to use clean water and fill the manhole so that it will sink to the bottom due to increase in weight. Clean water from Wellsville Fire Department was used to fill the inside of MH-A (Section 1) while pumping out water from annular space between MH-A and the steel pipe. Approximately after filling clean water to 3/4th of Section 1, MH-A started sinking and settled at the bottom at the required elevation. Section 2 of MH-A was then installed on top of Section 1 and both sections were leveled and aggregate was placed around MH-A.
1720	Spoke to Todd Weaver (dozer operator for Compass) and Jerry Resnik about the backfill lifts. It was conveyed to Todd and Jerry the number of lifts required per manhole and that roughly half of them have been documented. Todd guaranteed that the lifts are indeed 12" loose lifts and said that since he has been working the dozer, not one section of the trench has required nine feet of backfill – more specifically Manhole E, Manhole F and Manhole G. Todd then stated that Gaudy came in with the 330 L excavator prior to him placing the lifts to work/compact the soil, possible causing soil from the banks to collapse and add an additional layer of soil to the backfill used to anchor the trench. As a reminder, Jerry stated that at least 12 to 18 inches of backfill is needed to anchor the Geotextile fabric in the trench (which can not be compacted), thus compensating for at least two lifts. A majority of the testing was conducted on Friday, October 5, 2007, but there was not proper documentation to support this. Jerry said that after the QA Meeting on Friday, he talked to the Todd, Mike Vails and the ATL technician, Jared Howe, and reminded them of the lift depths and the testing procedure. This morning, Jerry talked to the ATL technician and reiterated the required thickness of the lifts and the required testing procedure. From here on out, the Jerry and SECOR's QA Official will speak with the ATL technician every morning, prior to the start of work, to assure that the proper testing is being conducted and documented. In addition, the SECOR QA Official will observe, document and photo log the soil lifts backfilled daily.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	SECOR RE spoke to Terry LeMasters and asked him to submit the following information by tomorrow (October 10, 2007): survey log, trench depths and manhole depths.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Atlantic Testing Laboratories documentation for testing conducted on October 8, 2007

Signature: Stephanie L. Andrews **Date:** 10/16/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/9/07**

Report # **052**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	51	79
Precipitation		
Dom. wind direction	N	
Forecast; Sunny		

Work Performed and Production Rates

Completed excavation for manhole A. While setting the manhole the base of the manhole would not submerge in the water (manhole floated). Dave called fire department and had fire truck come and pump water into base of manhole to weight it enough to sink. Continue backfill of full scale trench between manhole G and H.

ATL did compaction testing of trench.

Forecasted Work

Excavate for manhole B. Continue backfill of full scale trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Severe weather	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Personnel Changes**

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

***Equipment Deliveries**

Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Shipped Offsite			

*Material Deliveries			
Material type	Vendor	Quantity	Purpose
Pumps	Kelner	14	Manhole pumps

*Equipment used	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

*Submittals	Transmittal	Section	Subsection	ID

*Analytical Data	Sample ID	Type	Number of Pages	Provider

*Erosion Control	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Wednesday, October 10, 2007

SECOR

PARTIES ON SITE
BP/Atlantic Richfield
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
James Ball Land Surveying

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Dick Stanford	National Grid
Ron Schlicht	National Grid
Jeff Muarry	FedEx

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*

DAILY ACTIVITIES

Installed Sections 3 and 4 of MH-A, pulled the 10' diameter steel pipe and trench box out of the excavation. Placed aggregate to required elevation around MH-A, and completed the infiltration trench approximately 30' North and South of MH-A and tied it into previously completed trench.

Continue to break ± 213.5-foot concrete wall located between Manhole D and Manhole E

Place 12" loose (8" compacted) lifts 200 feet south of Manhole G, 200 feet north of Manhole H and 200 feet south of Manhole H. Four lifts, approximately 12" loose lifts compacted to roughly 8", were completed to the north of Manhole H and two lifts were completed south of Manhole H.

Density conducted by Atlantic Testing Laboratories (ATL) along Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
110' N MH-H	-19"	11 ± 3	116.5	10.0	115.4	99.1
150' N MH-H				11.8	112.4	96.5
200' S MH-G	-8"			13.2	114.3	98.1
160' S MH-G				10.0	116.5	100.0
95' S MH-G				10.5	113.9	97.7
25' S MH-H	-9'			9.3	119.4	102.5
45' N MH-H	-1'			10.3	118.2	101.5
75' N MH-H				13.8	116.2	99.7
200' S MH-H				10.2	116.5	100.0
80' N MH-H	-0'			8.9	111.5	95.7
100' S MH-H	-8'			12.4	111.4	95.6
70'S MH-H	-7'			10.6	115.3	99.0

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space and Ground Disturbance.
- Review JSAs.
- Severe weather watch today

H & S Meeting at 12:45 PM

- No changes to construction activities
- Compass has a new H & S officer. Everyone on Site should add his name and number to their H & S cards

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
0910	Terry LeMasters was given a list of compaction tests for each of the soil lifts – by Manhole and by date – that are missing. Jerry Resnik talked to the ATL technician to remind him of the testing procedure.
0915	Spoke to Todd Weaver about the number of lifts between Manhole G and Manhole H. By the time he got to this section the trench was already backfilled to roughly six feet below ground surface. Approximately three or four lifts of soil have been places (backfilled 10/09/2007). He also explained – per our conversation yesterday – that after the trench box is positioned, a suitable slope of soil is placed so that a worker can approach the trench box safely. Once the trench box is removed, he believes that the soil surrounding the trench box collapses in to the bottom of the trench and creates an additional layer of backfill, thus reducing the number of lifts required to backfill the entire trench.
1800	Installation of MH-A required approximately 100' of compacted trench to South of MH-A to be excavated to approximately 5-7 feet below grade. Hence, this length of trench needs to be re-compacted and tested.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	BOL for John Deere 250 D Off Road Haul Truck
2	BOL for Volvo A-35 Off Road Haul Truck
3	BOL for John Deere 230-LC Excavator
4	BOL for Weiser Concrete Meter Box BOL for Section 4 of Manhole H BOL for Cascade Aerator Splitter BOL for 4 boxes of 1 ¼" Conseal
5	Daily Health and Safety Reports for 10/03, 10/04, 10/05, 10/08 and 10/09

Signature: Stephanie L. Andrews

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Date: 10/12/2007

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/10/07**

Report # **053**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		48	67
Precipitation			
Dom. wind direction	W		
Forecast; Sunny			

Work Performed and Production Rates

Tied trench on North and South ends into manhole A. Completed breaking concrete in trench and loaded out to concrete staging area. 140 cy of concrete hauled today bringing total concrete removed from trench to 180 cy.

ATL did compaction testing of trench.

Forecasted Work

Excavate for manhole B. Continue backfill of full scale trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Safe distance from excavation	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Thursday, October 11, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
James Ball Land Surveying

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Chris Wright	Atlantic Testing
Chad Weber	Rochester Rental
Bruce Cady	Shorts

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
NONE		

DAILY ACTIVITIES

Excavate and install sections 1 and 2 of Manhole B

Place 12" loose (8" compacted) lifts 200 feet south of Manhole H. Seven lifts, approximately 12" loose lifts compacted to roughly 8", were completed to south of Manhole H.

Density conducted by Atlantic Testing Laboratories (ATL) along Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (loose lifts)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
110' S MH-H	-6' (4th lift)	7.0	136.0	8.9	126.0	92.6
100' S MH-H	-5' (5th lift)			7.7	127.4	93.7
165' S MH-H	-4' (6th lift)			7.4	126.0	92.6
90' S MH-H	-3' (7th lift)			10.0	123.2	90.6
160' S MH-H	-2' (8th lift)			10.0	123.9	91.1
180' S MH-H	-1' (9th lift)			8.0	123.9	91.1
200' S MH-H	0 (10th lift)			7.2	127.3	93.6

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space and Ground Disturbance.
- Review JSAs.
- Workers were reminded to stay two feet from the side of the trench. Floatation devices and harnesses are need for workers going into the trench and a flotation device, harness and life line are needed for those entering a confined space.

H & S Meeting at 12:45 PM

- No changes to construction activities
- Everyone was reminded to stay out of the swing radius of the operators and do not stand under the bucket of the excavator.

Weekly Progress Meeting at 1:30 PM

- No safety issues
- Work performed
- Work projected for next week

- Schedule – roughly 20 days behind
- Compass has set an anticipated demobilization date of November 16, 2007
- Open Items
- ***For more details see Weekly Progress Meeting Minutes***

	SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS
0900	The location of MH-B had to be moved approximately 9 feet South from the originally planned location as the North Storm Sewer runs across the originally planned location. To prevent the North Storm Sewer from collapsing on MH-B, the excavator bucket was placed in between MH-B and the North Storm Sewer.
1015	Two lifts have been placed south of Manhole H as of 10:15 AM. ATL technician conducted testing on second lifts and yielded the following results: moisture content – 8.4% and compaction – 78.7%. The technician said that he did not have a proctor for the type of material being placed in the lifts today – a sample was taken this morning and will be sent back to the lab – and he was relying on the density readings to determine the acceptability of the lift. SECOR QA Official and Resident Engineer requested that backfilling cease until a proctor could be received for the material. Todd Weaver suggested using soil extracted from the pond, which has a known proctor. The ATL technician was not happy with the consistency of the soil and frowned upon using it. Chris Wright from ATL will be on-site this afternoon to observe the stock piles and determine what to do regarding the two lifts already backfilled.
1250	SECOR RE met with Terry LeMasters (QA Compass) and Chris Wright (PM ATL Labs) to discuss about trench backfilling procedures and compaction tests. SECOR conveyed clearly that all backfill lifts should be no more than a foot and compacted to 8 inches and tested for compaction according to the specifications. Chris Wright (ATL) was made aware of the project needs and the compaction requirements.
1630	A different type of soil was used as backfill in the trench south of Manhole H with a known proctor. The two previous layers of backfill were removed and replaced with the soil that had the known proctor. Todd Weaver was concerned about the number and size of rocks in this soil. After carefully observing the soil, it has been advised that soil with fewer rocks be used for the remaining lifts. (Specification 02210A – Earthworks states that native soils shall be free of aggregates larger than three inches.) This section of the trench may have to be revisited at a later time until suitable soil can be found.

	DESIGN CONCERNS AND RESOLUTIONS
	NONE

	SUBMITTAL CONCERNS AND RESOLUTIONS
1	SECOR QA Official talked to Jerry Resnik and Terry LeMasters about a copy of the survey log requested on Tuesday, October 9, 2007. Compass will submit a copy by Friday.

	SUBMITTALS AND MISC. DOCUMENTS RECEIVED
1	An updated overdue/missing submittal list, in response to the list submitted to Compass last week, was received via email from Terry LeMasters.
2	Atlantic Testing Laboratories documentation from testing conducted on Wednesday, October 10
3	Requested information from Submittal 034 for the weir gates. Awaiting new submittal number.
4	Requested resin information for the Geomembrane liner. Awaiting a submittal number.

Signature: Stephanie L. Andrews **Date:** 10/16/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/11/07**

Report # **054**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		39	56
Precipitation			
Dom. wind direction	W		
Forecast; Sunny			

Work Performed and Production Rates

Excavated for manhole B, set manhole box. Set manhole B base and second section. Continue backfilling in pilot trench area.

ATL did compaction testing of trench.

Forecasted Work

Tie trench into North and South ends of manhole B. Continue backfill of full scale trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Personal floatation devise	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Friday, October 12, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
James Ball Land Surveying

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Lloyd Hollenbeck	Industrial Services
Jeff Muarry	FedEx
Randy Ewings	Hillside Landscaping
Jody Forester	Godwin Pumps
Barry Simmons	FedEx Freight

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Calciment (Fly Ash) – 24.340 tons		X

DAILY ACTIVITIES
Completed infiltration trench North and South of Manhole B and tied into previously completed trench on both sides.
Installed Sections 3 and 4 of Manhole B and backfilled with natural material around Manhole B. After complete installation, Manhole B appears to be crooked, leaning towards Southeast.
Moved Manhole C sections to the vicinity of its installation location
Grouted the fittings to Section 1 of Manhole C and installed the 4" Corrugated HDPE Pipe on both sides of Section 1 of Manhole C

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights, Confined Space and Ground Disturbance. • Review JSAs. • OSHA fall protection discussion.
H & S Luncheon at 12:00 PM • No changes to construction activities.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	NONE

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Survey log

Signature: _____ **Date:** 10/16/07

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/12/07**

Report # **055**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		36	55
Precipitation			
Dom. wind direction	W		
Forecast; Sunny			

Work Performed and Production Rates

Pulled manhole box from manhole B excavation and relocated to manhole C. Tied trench into manhole on North and South ends. Placed 3rd and 4th sections on manhole B. Backfilled under 48 inch sewer pipe. Moved all manhole plumbing into lockable building. Leveled off pile in staging area 2.

ATL did compaction testing of trench.

Forecasted Work

Excavate for manhole C and place manhole box. Continue backfill of full scale trench.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Proper PPE for task	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Personnel Changes**

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

***Equipment Deliveries**

Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Shipped Offsite			

*Material Deliveries			
Material type	Vendor	Quantity	Purpose

*Equipment used	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

*Submittals	Transmittal	Section	Subsection	ID

*Analytical Data	Sample ID	Type	Number of Pages	Provider

*Erosion Control	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, October 15, 2007

SECOR

PARTIES ON SITE
BP/Atlantic Richfield
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site
James Ball Surveying

VISITORS	
Name	***Company***
Tom Noel	Howgen
Fred Eisaman	Howgen
Eugene Murphy	Howgen
Jeff Hitchcock	Howgen
Dave Sebzda	Howgen
Josh Mest	Howgen
Mart Brehm	Howgen
Jeff Pixely	Howgen
Brenda Grover	Grover Toilets
Tim Cleary	Atlantic Testing
Mark Struble	Struble Trucking
Chris Struble	Struble Trucking
Brandon Smith	UPS
Marty Schmidt	BP

EQUIPMENT / MATERIALS

Item	*Removed from Site*	*Received*
2 loads of Calciment (Fly Ash) – approximately 50.650 tons		X
18 loads of pea gravel (Infiltration Trench aggregate) – approximately 535.53 tons; all passed jar test		X

DAILY ACTIVITIES

Successfully installed sections 1,2,3 and 4 of Manhole C

Work soil and fly ash together in soil staging area

Attempt to lay first lift (roughly -8' bgs) of soil from Manhole A to 200 feet south of Manhole A

Lay two lifts (approximate -7' bgs and -6' bgs – loose lifts – respectively) a total of 50 feet north of the northern most edge of Manhole B and two lifts (approximate -10' bgs and -9' bgs – loose lifts – respectively) a total of 40 feet south of the southern most edge of Manhole B.

Density conducted by Atlantic Testing Laboratories (ATL) along Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (loose lifts)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
25' N MH-B	-7' (1st lift)	7.0	136.0	8.9	125.9	92.6
20' N MH-B	-6' (2nd lift)			9.5	127.7	93.9

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space and Ground Disturbance.
- Review JSAs.
- Discussion on confined space: definitions, when a permit is required, etc.

H & S Meeting at 12:45 PM

- No changes to construction activities.

• An AED is now on Site. The device is located in the Health and Safety and Security trailer. • Joe Sontchi will have a visitor with him today.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1100	The following concerns were observed along the Infiltration Trench: • *Section of Infiltration Trench north of Manhole F to the SUNY Masonry building and North of Manhole E to the concrete wall*: the upper most lift has a loose layer of soil that has not been compacted. • *Section of the Infiltration Trench north of Manhole G to the South Storm Sewer:* piles of soil were dumped on the upper most lift. When these piles are spread out, that lift will be more than a 12" loose lift (compacted to 8"). Also, the ruts in the upper most layers indicate that the underlying soil was not compacted to the required specifications. • *Section of the Infiltration Trench where the concrete wall* was located: portions of the concrete wall are still visible. In addition, this portion of the trench was backfilled without being compaction tested.
1130	In response to the concerns above, Todd Weaver from Compass clarified: • *Section of Infiltration Trench north of Manhole F to the SUNY Masonry building and North of Manhole E to the concrete wall*: this is the final lift of soil for this portion of the manhole and it will be compacted once the applicable manhole is installed. All underlying layers have passed their respective compaction test. • *Section of the Infiltration Trench where the concrete wall:* this portion of the trench was backfilled in order to serve as a bridge so that the concrete could be removed. This part of the Infiltration Trench has not been tested. The soil will have to be removed and the appropriate number of lifts installed, compacted and tested.
1145	Three compaction tests were conducted within a range of 5 to 20 feet south of Manhole A to roughly -8' below ground surface. The results yielded a compaction of 85%, 83.9% and 80%. The lift was removed and additional fly ash was added to this lift. Todd Weaver and the ATL technician are concerned about the proctor for this soil. A new sample may need to be tested.
1206	Informed by Jennifer Menges that a drawing of the concrete wall was made to illustrate which portions of the wall were to be removed by Compass. The remaining portions of the concrete wall that were observed this morning are the segments indicated on the drawing that did not have to be removed.
1300	Reworked, rolled and compaction tested the first lift north of Manhole A. The test results yielded a compaction of 74.9% and moisture content of 11.9%. The ATL technician took a sample of the soil at Manhole A and from the soil at the stock pile (which contains fly ash) to be re-proctored. Backfilling at Manhole A will cease until a proctor is received – most likely not until Thursday.
1415	The proctor being used for the backfill at Manhole A came from the gravel-silt like material (mixed with fly ash) located in the soil staging area. The soil used today – extracted from the banks and berm surrounding Manhole A – is clay and shows minimal drying effects.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	BOL for calciment (fly ash) received on October 12, 2007
2	ATL testing documentation conducted on October 11, 2007

Signature: Stephanie L. Andrews **Date:** 10/18/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **10/15/07**

Report # **056**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		39	62
Precipitation			
Dom. wind direction	W		
Forecast; Sunny			

Work Performed and Production Rates

Excavated for manhole c, set manhole box. Set manhole C and other three sections. Backfilling around manhole B. Sent sample of backfill material to lab for proctor, not passing on compaction and moisture. Backfilling over gravel having to be bridged from 3 to 4 feet to be able to get roller in trench to compact.

ATL did compaction testing of trench.

Forecasted Work

Excavate for manhole D and place manhole box. Cut and fill of wetlands area.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Equipment inspections	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Shipped Offsite

*Material Deliveries

Material type	Vendor	Quantity	Purpose
Infiltration stone	Buffalo Crushed	535.53	Stone for infiltration trench

*Equipment used

345 Excavator
330 Cat excavator
2 John Deere off road truck
924 loader

*Submittals

Transmittal	Section	Subsection	ID

*Analytical Data

Sample ID	Type	Number of Pages	Provider

*Erosion Control

Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Tuesday, October 16, 2007

SECOR

PARTIES ON SITE
BP/Atlantic Richfield
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site

VISITORS	
Name	***Company***
William Byers	Hertz
Khaled Al-Kahras	CDM

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
NONE		

DAILY ACTIVITIES
Excavate and install trench box at Manhole D
Install sections 1 and 2 of Manhole D
Excavated approximately 55 feet of the Infiltration Trench 25 feet north of Manhole C to 80 feet north of Manhole C
Backfilled 55 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone) 25 feet north of Manhole C to 80 feet north of Manhole C
Place approximately 55 feet of Geotextile liner over the aggregate stone spanning from 25 feet north of Manhole C to 80 feet north of Manhole C
Excavate Cell #1 of the Surface Flow Wetlands
Haul excavated soils from the Surface Flow Wetlands to the berm of the Vertical Flow Wetlands
Place and compact one lift (12" loose lift compacted to 8") of soil from the Surface Flow Wetlands around the berm of the Vertical Flow Wetlands
Re-cut the sides of the Vertical Flow Wetland beds according to the surveyed stakes

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights, Confined Space and Ground Disturbance. • Review JSAs. • Workers are standing to close to the manhole excavation. • Improper lifting consequences – Learned lesson by Compass employee
H & S Meeting at 12:45 PM • No changes to construction activities. • Distribute Safe Lifting packet

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
0745	During the morning Health and Safety meeting, Compass stated that they would be sending a crew to the Surface Flow Wetlands (SFW) to cut and fill. According to the Weekly QA Meeting Minutes from Thursday, October 11, 2007, Compass indicated that no work would continue on the SFW until compaction testing was conducted. To date, compaction testing has not been conducted on the SFW. The RE and QA Official talked to Jerry Resnik and Terry LeMasters regarding the issue. They said that one lift has been put down in the cells already constructed. The crew will only be cutting and rolling today so that when the ATL technician gets here it can be tested right away.
0900	Began excavating inside the trench box at Manhole D. Water was encountered at approximately 12 feet below ground surface. Most of the buckets of material removed were 75% water. The water pouring out of the haul trucks is hitting the ground and flowing back into the manhole causing the east sides of the manhole excavation to erode.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
1116	Email Terry LeMasters a list of missing reports and pea gravel spreadsheets: • Weekly QA Report from October 11, 2007 • Daily QA Report from October 10, 2007 • Aggregate stone sampling spreadsheet from October 8, 2007 • Aggregate stone sampling spreadsheet from October 15, 2007
1315	Receive missing reports and spreadsheets from Terry LeMasters

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	BOL for 2 loads of calciment (fly ash) – 50.650 tons – received on October 15, 2007
2	ATL testing documentation conducted on October 15, 2007
3	BOL for 18 loads of pea gravel (Infiltration Trench aggregate) – 535.53 tons – received on October 15, 2007
4	*Submittal 066:* Imported Material – Analytical
5	Daily QA Report from October 10, 2007
6	Aggregate stone sampling spreadsheet from October 8, 2007
7	Aggregate stone sampling spreadsheet from October 15, 2007
8	Weekly QA Report from October 11, 2007
9	Daily QA Report from October 15, 2007

Signature: Stephanie L. Andrews **Date:** 10/19/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/16/07**

Report # **056**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		41	64
Precipitation			
Dom. wind direction	W		
Forecast; Sunny			

Work Performed and Production Rates

Excavated for manhole C, set manhole box and pipe. Set manhole C and gravel. Excavated trench and tied into manhole C to the South. Excavating trench to tie in the North where access was left for electric company to move pole. 25 ft North of manhole C btm 1477, tos 1490. 43 ft North of manhole C btm 1477, tos 1490. 61 ft North of manhole C btm 1477, tos 1490. 79 ft North of manhole C btm 1477, tos 1490.

Having to bridge material over stone in trench 3 to 4 ft to get a solid base for roller to get in.

ATL did compaction testing of trench.

Forecasted Work

Excavate for manhole D and place manhole box. Cut and fill of wetlands area.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Swing radius of excavator	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Visitors		
Name	Company	Purpose of Visit

*Personnel Changes				
Name	**Company**	**Title**	**Mobilization**	**Demobilization**
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries			
Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Shipped Offsite**

***Material Deliveries**

Material type	Vendor	Quantity	Purpose
Infiltration stone	Buffalo Crushed	535.53	Stone for infiltration trench

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Wednesday, October 17, 2007

SECOR

PARTIES ON SITE
BP/Atlantic Richfield
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site
James Ball Surveying

VISITORS	
Name	***Company***
Khaled Al-Kahras	CDM
Tim Cleary	ATL
Kevin Glaser	NYSDEC
Phil Egge	Milton Cat
Ike Payton	Horton Trucking
Brandon Smith	UPS
William Byers	Hertz
Dwight Allen	Allegany Landscape

EQUIPMENT / MATERIALS

Item	*Removed from Site*	*Received*
John Deere 250D Off-Road Haul Truck	X	
Section 1, 2 and 3 of Manhole E		X
Section 1 of Manhole F		X

DAILY ACTIVITIES

Excavated approximately 95 feet of the Infiltration Trench 79 feet north of Manhole C to 130 feet north of Manhole C And 7 feet north of Manhole D to 51 feet north of Manhole D

Backfilled 95 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone79 feet north of Manhole C to 130 feet north of Manhole C And 7 feet north of Manhole D to 51 feet north of Manhole D

Place approximately 95 feet of Geotextile liner over the aggregate stone spanning from 79 feet north of Manhole C to 130 feet north of Manhole C And 7 feet north of Manhole D to 51 feet north of Manhole D

Cut Vertical Flow Wetland Cells 1, 2, 3 and 4 according to the stakes placed by Jim Ball.

Place and compact two lifts (approximately 12" loose lifts compacted to 8") of soil on the berm of the Vertical Flow Wetlands

Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Vertical Flow Wetlands (see below for locations):

Project specs require 95% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
Cell #4, W bank, 10' S of N Bank	-16"	7.0	136	9.2	130.6	96.0
W bank, Center between cells 4 and 5	-8"			6.4	132.1	97.1

Grout outlet pipe to section 1 of Manhole E and section 1 of Manhole F

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space and Ground Disturbance.
- Review JSAs.

• Slideshow – Injurious Contact with Heavy Equipment
H & S Meeting at 12:45 PM • No changes to construction activities. • Near miss with haul truck – excavated pipe was lodged in the tailgate after the soil was dumped in the soil staging area and feel off while driving back to the excavation site. • Observation: overloading of the haul trucks. Saturated material is pouring out of the trucks without the tailgates.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1330	SECOR QA Official reviewed ATL documentation on the compaction testing performed on the lifts at the Vertical Flow Wetlands. SECOR is missing documentation for three of the lifts.

DESIGN CONCERNS AND RESOLUTIONS	
1	Review Specification Section 02670: Vertical Flow Wetlands. The following spec and drawing details must be observed and documented while constructing the Vertical Flow Wetlands: ▪ External side slope 3:1 ▪ Internal side slope 3:1 ▪ Maximum particle size: 3" ▪ Compaction: 12" loose lifts compacted to 8" (approximately 8 or 9 lifts required) ▪ Bed elevations: 1499.00' ▪ Berm elevation: 1505.5' ▪ Ground surface elevation: 1500.00'

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
0845	Joe Sontchi raised a question about a response from Compass in last week's Weekly Progress Meeting Minutes in regards to an overdue/missing submittal. More specifically: o **02209A – Soil and Sediment Removal / Handling / Placement** *Page 02209A-1 – In the RAWP* ▪ Written procedure describing the methods proposed for excavating and handling soil including movement of excavated material to the on-site materials handling. The procedure written by Compass does not meet the Specifications. A copy of the excavating and hauling procedure will need to be reviewed.
0850	SECOR QA Official asked Terry LeMasters to provide documentation of the excavating and hauling procedure as described above. Terry will pass this along to Jerry Resnik.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily QA Report for October 16, 2007

Signature: Stephanie L. Andrews **Date:** 10/23/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/17/07**

Report # **057**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		50	68
Precipitation			
Dom. wind direction	W		
Forecast; Sunny			

Work Performed and Production Rates

Excavating trench to tie in. 97 ft North of manhole C btm 1477, tos 1490. 115 ft North of manhole C btm 1477, tos 1490. 130 ft North of manhole C btm 1477, tos 1490. 25 ft North of manhole D btm 1482, tos 1490. 35 ft North of manhole D btm 1482, tos 1490. 51 ft North of manhole D btm 1482, tos 1490.

Having to bridge material over stone in trench 3 to 4 ft to get a solid base for roller to get in.

ATL did compaction testing of trench.

Forecasted Work

Continue excavation of trench at area where concrete was removed. Excavate and place manhole E. Cut and fill of wetlands area.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Seat belts in equipment	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Visitors		
Name	Company	Purpose of Visit

*Personnel Changes				
Name	**Company**	**Title**	**Mobilization**	**Demobilization**
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries			
Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Shipped Offsite**

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Thursday, October 18, 2007

SECOR

PARTIES ON SITE
BP/Atlantic Richfield
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site
James Ball Surveying

VISITORS	
Name	***Company***
Khaled Al-Kahras	CDM
Tim Cleary	Atlantic Testing
Joshua Murdock	Larry's Latrines
William Byers	Hertz
Bruce Cody	Shorts
Mike Tompson	Shorts

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
NONE		

DAILY ACTIVITIES

Excavated approximately 54 feet of the Infiltration Trench 51 feet north of Manhole D to 105 feet north of Manhole D

Backfilled 54 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone) 51 feet north of Manhole D to 105 feet north of Manhole D

Place approximately 54 feet of Geotextile liner over the aggregate stone spanning from 51 feet north of Manhole D to 105 feet north of Manhole D

Excavate Manhole E

Install sections 1 and 2 of Manhole E

Place and compact two lifts (approximately 12" loose lifts compacted to 8") of soil within 12 feet north of Manhole A and two lifts within 15 feet south of Manhole A. For precise locations, see the table below.

Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (compacted lifts up to grade)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
10' S MH-A	8" (1st lift)	9.5	121.0	9.9	117.5	97.1
15' S MH-A	16" (2nd lift)			12.0	109.7	90.7
8' N MH-A	24" (3rd lift)			12.2	108.9	90.0
12' N MH-A	32" (4th lift)			12.3	116.8	96.5

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space and Ground Disturbance.
- Review JSAs.
- Discuss hazardous communication.

H & S Meeting at 12:45 PM

- No changes to construction activities.
- Rebar sticking out of the soil was observed at Manhole D. Use caution when walking in that area.

Weekly Progress Meeting at 1:30 PM

- No safety issues
- Work performed

- Work projected for next week
- Schedule – roughly 25 days behind
- Open Items
- Attendees: SECOR – Ken Hannon and Stephanie Andrews; Compass Environmental – Jerry Resnik and Terry LeMasters; BP/Atlantic Richfield – Joe Sontchi; On-Site – Jerry Palmer
- ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1330	The ATL technician received a proctor for the soil sample that was sent to the lab on Monday, October 15, 2007 to be re-proctored. The proctor for material without fly ash is 116.5 with an optimum moisture content of 11 ± 3%. The proctor received for soil with fly ash is 121 with an optimum moisture content of 9.5 ± 3%.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
1330	QA Official was informed by Jerry Resnik that Mark Tiley from ACF Environmental was contacted regarding the warranties needed for the Geomembrane liner at the Sedimentation Pond. He will send them to Jerry ASAP.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily QA Report for October 17, 2007
2	Weekly QA Report for the week of October 15 - October 18, 2007
3	ATL testing documentation for the compaction testing performed on October 17, 2007
4	BOL for sections 1, 2, and 3 of Manhole E and section 1 of Manhole F

Signature: Stephanie L. Andrews **Date:** 10/23/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/18/07**

Report # **058**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		54	71
Precipitation			
Dom. wind direction	W		
Forecast; Sunny			

Work Performed and Production Rates

Excavating trench to tie in. 69 ft North of manhole D btm 1482, tos 1490. 77 ft North of manhole D BTM 1482, TOS 1490. 95 ft North of manhole D btm 1482, tos 1490. 105 ft North of manhole D btm 1482, tos 1490.

Having to bridge material over stone in trench 3 to 4 ft to get a solid base for roller to get in.

ATL did compaction testing of trench.

Forecasted Work

Continue excavation of trench to tie in.. Cut and fill of wetlands area.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
3 points of contact	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Name	Company	Purpose of Visit

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Shipped Offsite			

*Material Deliveries			
Material type	Vendor	Quantity	Purpose

*Equipment used	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

*Submittals	Transmittal	Section	Subsection	ID

*Analytical Data	Sample ID	Type	Number of Pages	Provider

*Erosion Control	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Friday, October 19, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site
James Ball Surveying

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Jay Knapp	Shorts
Phil Luce	Shorts
Dave Heater	Milton Cat
Jeff Murray	FedEx

EQUIPMENT / MATERIALS

Item	*Removed from Site*	*Received*
17 loads of pea gravel (Infiltration Trench aggregate) – approximately 538.10 tons; all passed jar tests		X

DAILY ACTIVITIES

Excavated approximately 98 feet of the Infiltration Trench from Manhole D to 98 feet south of Manhole D

Backfilled 98 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone) from Manhole D to 98 feet south of Manhole D

Place approximately 98 feet of Geotextile liner over the aggregate stone spanning from Manhole D to 98 feet south of Manhole D

Place and compact two lifts (approximately 12" loose lifts compacted to 8") of soil within five feet south of Manhole A. For precise locations, see the table below.

Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (compacted lifts up to grade)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
5' S MH-A	40" (5th lift)	9.5	121.0	12.3	117.9	97.4
3' S MH-A	48" (6th lift)			11.2	116.3	96.1

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space and Ground Disturbance.
- Review JSAs.
- Crane collapse movie clip.
- Confined space explosion movie clip.
- Photo of snake in equipment.
- Sever weather watch for today.

H & S Luncheon at 12:00 PM

- No changes to construction activities.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS

0725	SECOR QA Official was not notified by Compass QC Official concerning the arrival of the first two truckloads of aggregate stone. (Compass has been reminded on several occasions to notify SECOR's QA Official upon the delivery of the stone.) Every pile of stone in the area where new stone was unloaded was

	retested due to the uncertainty of the location of the first two loads of stone received today – all tests successfully passed. As a result, all delivers will be stopped at the security trailer until the SECOR QA Official is present to witness the dumping of the delivered stone. In addition, there will be no one deliveries to the north end of the site.
1025	Terry LeMasters received a call from the ATL technician; it is too wet to perform compaction tests. He will return on Monday.
1027	Terry LeMasters informed SECOR QA Officials that peizometers will arrive on November 5, 2007 and will be installed then.
1700	Worked stopped for the day due to the rain.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily QA Report for October 18, 2007
2	ATL testing documentation for compaction testing performed on October 18, 2007

Signature: Stephanie L. Andrews **Date:** 10/23/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/19/07**

Report # **059**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	51	68
Precipitation		
Dom. wind direction	W	
Forecast; Rain		

Work Performed and Production Rates

Excavating trench to tie in. 42 ft South of manhole D btm 1482, tos 1490. 61 ft South of manhole D btm 1482, tos 1490. 79 ft South of manhole D btm 1482, tos 1490. 97 ft South of manhole D btm 1482, tos 1490. Backfilled manhole A till rain stopped compaction testing.

ATL did compaction testing of trench.

Forecasted Work

Continue excavation of trench to tie in.. Cut and fill of wetlands area.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Slippery Conditions	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Deliveries

Material type	Vendor	Quantity	Purpose
Trench stone	Buffalo Crushed	538.10	Bottom of trench

	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

***Equipment used**

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, October 22, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site
James Ball Surveying

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
John Jacobus	R & K Trucking
Jeff Gordon	DPW
Brenda Grover	Grover Toilets
Brandon Smith	UPS
Adam Raxner	Vantage Equipment
Kurt Matteson	USPS

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Sections 2 and 4 of Manhole F		X
Sections 1 and 2 of Manhole G		X
Concrete cover for Manhole A		X

DAILY ACTIVITIES

Excavated approximately 126 feet of the Infiltration Trench from 99 feet south of Manhole D to 175 feet north of Manhole E

Backfilled 126 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone) from 99 feet south of Manhole D to 175 feet north of Manhole E

Place approximately 126 feet of Geotextile liner over the aggregate stone spanning from 99 feet south of Manhole D to 175 feet north of Manhole E

Haul dry soil excavated approximately 10 feet below ground surface, south of Manhole D, to Manhole A and Manhole B to be used as backfill.

Place and compact two lifts (approximately 12" loose lifts compacted to 8") of soil – containing fly ash – within 9 feet north of Manhole A; three lifts (approximately 12" loose lifts compacted to 8") of soil – containing fly ash – within 15 feet south of Manhole A; three lifts (approximately 12" loose lifts compacted to 8") of soil – *without* fly ash – within 10 feet north of Manhole A; three lifts (approximately 12" loose lifts compacted to 8") of soil – *without* fly ash – within 20 feet south of Manhole A; two lifts (approximately 12" loose lifts compacted to 8") of soil – containing fly ash – within 25 feet north of Manhole B; and three lifts (approximately 12" loose lifts compacted to 8") of soil – containing fly ash – within 30 feet south of Manhole B. For precise locations, see the table below.

Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (compacted lifts up to grade)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
15' S MH-A	+56" (7th lift)	9.5	121.0	11.6	116.0	95.9
8' S MH-A	+64" (8th lift)			10.9	117.1	97.0
10' S MH-A	+72" (9th lift)			10.4	114.8	94.9
6' N MH-A	+80" (10th lift)			10.0	118.5	97.9
9' N MH-A	+88" (11th lift)			11.1	115.2	95.2
10' N MH-A	+96" (12th lift)	11.0	116.5	13.3	115.4	99.0
9' S MH-A	+104" (13th lift)			13.0	115.5	99.1
5' N MH-A	+112" (14th lift)			12.9	116.2	99.7
10' N MH-A	+120" (15th lift)			12.3	115.8	99.4

	18' S MH-A	+128" (16th lift)			9.8	116.5	100.0
	20'S MH-A	+136" (17th lift)			12.1	115.7	99.3
	12' S MH-B	+24" (3rd lift)	9.5	121.0	11.8	117.0	96.7
	25' N MH-B	+32" (4th lift)			11.2	116.6	96.4
	15' S MH-B	+40" (5th lift)			10.7	122.4	101.2
	12' N MH-B	+48" (6th lift)			10.4	116.8	96.5
	30' S MH-B	+56" (7th lift)			10.9	119.8	99.0
Install the concrete cover at Manhole A.							
Transport the pile of fly ash located approximately 200 feet southwest from Manhole A to Manhole G.							

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights and Ground Disturbance.
- Review JSAs.
- Article about railroad death.
- Discussion regarding fire extinguisher types and what situations they are to be used.

H & S Meeting at 12:45 PM

- No changes to construction activities.
- Use precaution when walking near or in the path of haul trucks.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS

1030	Manhole A has not been properly covered and fenced off and posses a hazard while backfilling around it. Jerry Resnik indicated that a berm will be placed around the manhole so that the roller does not have to be close to the uncovered manhole. The berm will then be compacted once the manhole cover is installed. Until the manhole cover is received, Compass will place temporary fencing over and around the manhole, similar to Manhole H.
1530	A large concrete slab was encountered while digging the 6th run – 189 feet south of Manhole D. The concrete slab was removed and placed on the west bank of the Infiltration Trench.
1615	Another large concrete slab was encountered while excavating the top five feet of the Infiltration Trench 193' north of Manhole E. It was removed and placed on the west bank of the trench.

DESIGN CONCERNS AND RESOLUTIONS

	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS

1	Terry LeMasters was notified regarding missing BOLs for the first three loads of pea gravel received on Friday.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED

1	Daily QA Report for October 19, 2007
2	ATL testing documentation for compaction testing performed on October 19, 2007
3	ATL testing documentation for compaction testing performed on September 19, 2007. (This is the missing documentation that Compass was to provide to SECOR regarding the Vertical Flow Wetland missing lifts.)
4	BOL for pea gravel (Infiltration Trench aggregate) received on October 19, 2007.
5	Map of the Infiltration Trench denoting survey locations via Jim Ball.

Signature: Stephanie L. Andrews **Date:** 10/23/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Date: **10/22/07**

Report # **060**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		55	71
Precipitation			
Dom. wind direction	W		
Forecast; Sunny			

Work Performed and Production Rates

Excavating trench to tie in. 99 ft South of manhole D btm 1482, tos 1490. 117 ft South of manhole D btm 1482, tos 1490. 135 South of manhole D btm 1482, tos 1490. 153 ft South of manhole D btm 1482, tos 1490. 171 ft South of manhole D btm 1482, tos 1490. 189 ft South of manhole D btm 1482, tos 1490. 207 ft South of manhole D btm 1482, tos 1490. 225 ft South of manhole D btm 1482, tos 1490.

Backfilling manhole A and manhole B.

ATL did compaction testing of trench.

Forecasted Work

Continue excavation of trench to tie in.. Cut and fill of wetlands area.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Equipment inspections	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

Visitors		
Name	Company	Purpose of Visit

*Personnel Changes				
Name	**Company**	**Title**	**Mobilization**	**Demobilization**
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries			
Description	Mobilization	Demobilization	Comments

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Shipped Offsite**

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Tuesday, October 23, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Craig Martin	Shorts
Mike Thompson	Shorts
Richard Forture	NFG
Dan Viuliella	NFG

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
16 loads of pea gravel (Infiltration Trench aggregate) – approximately 558.54 tons; all passed jar tests		X

DAILY ACTIVITIES
Assemble the interior components of the manholes – Submersible Pumps, effluent pipes, and rail guide system (first tier)
Decon Hertz John Deere 250D Off-road haul truck

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights and Ground Disturbance. • Review JSAs. • Discuss bloodborne pathogens

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
0700	Heavy rain prevented Compass from trenching, backfilling and compaction testing of the Infiltration Trench.
1430	The heavy rain continued and construction activities ended at roughly 1345.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	ATL testing documentation for compaction testing performed on October 22, 2007

Signature: Stephanie K. Andrews **Date:** 10/29/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/23/07**

Report # **061**

Project # **22070706R**

Weather

		Daily Low	Daily High
Average Temp.		50	67
Precipitation			
Dom. wind direction	W		
Forecast; Rain			

Work Performed and Production Rates

Put pump parts together, deconed 25 ton off road truck. Various administrative activities

Forecasted Work

Continue excavation of trench to tie in. Install railings into manhole A. Repair waterline on North end.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Proper PPE for task.	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose
Infiltration trench stone	Buffalo Crushed	558.54	Stone for infiltration trench.

***Equipment used**	
	345 Excavator
	330 Cat excavator
	2 John Deere off road truck
	924 loader

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Wednesday, October 24, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
James Ball Surveying

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Jay Knapp	Shorts
Brandon Smith	UPS
Roy Cole	Maybee Enterprises

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
NONE		

DAILY ACTIVITIES
Excavate Manhole F and Manhole G
Install trench box, 10-foot diameter steel pipe, and sections 1 and 2 of Manhole F
Excavated approximately 50 feet of the Infiltration Trench from Manhole F to 25 feet north of Manhole F and from Manhole F to 25 feet south of Manhole F (tied into previously completed Infiltration Trench on both sides)
Backfilled 50 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone) from Manhole F to 25 feet north of Manhole F and from Manhole F to 25 feet south of Manhole F
Place approximately 50 feet of Geotextile liner over the aggregate stone spanning from Manhole F to 25 feet north of Manhole F and from Manhole F to 25 feet south of Manhole F
Pump groundwater and remove accumulated gravel and silt from the interior of Manhole A
Repair water line located approximately 200 feet north of Manhole A

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights, Confined Space, and Ground Disturbance. • Review JSAs. • Discuss hypothermia.
H & S Meeting at 12:45 PM • No changes to construction activities. • Fuel cell PPE is now located in the job trailer.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1050	While pumping groundwater from Manhole A, a substantial amount of gravel and silt was encountered. The gravel and silt continuously clogged the pump making it difficult to remove the groundwater.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
1800	Terry LeMasters was informed regarding the following: • *Missing liner documentation:* o The Contractor/Installer shall warranty the workmanship on the liner for one year following the date of Geomembrane acceptance. o Geomembrane Manufacturer shall confirm in writing that the material to be furnished will be

	free of defects in material and workmanship at the time of sale, and against deterioration due to the effects of ozone, ultraviolet or other normal weathering on a pro-rate basis for 20 years from the date of completed installation. • *Missing Vertical Flow Wetlands lifts*, more specifically, Lift #5 (+ 40" up from grade). Terry LeMasters and Jerry Resnik are aware of the overdue documentation required for the Geomembrane liner. Terry will talk to the ATL technician and get the necessary documentation for the missing lift tomorrow (October 25, 2007).
1800	SECORs QA Official provided Terry LeMasters with a list of submittals needed for seeding (Specification 02936 – Finish Grading, Topsoil and Seeding) which will be done at the end of this month. Both Terry and Jerry Resnik stated that Joe Sontchi approved a change to the mix requirements for the seed mixture. Compass is no longer required to provide a 60/40 ratio of wildflower and native warm season grass, respectively, at the north end of the Site. This change does not affect the seed mixture requirements in other areas of the Site.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily QA Report for October 22, 2007
2	Daily QA Report for October 23, 2007
3	Pea gravel (Infiltration Trench aggregate) spreadsheet for sampling conducted on October 19, 2007.
4	Pea gravel (Infiltration Trench aggregate) spreadsheet for sampling conducted on October 23, 2007.

Signature: Stephanie L. Andrews **Date:** 10/29/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/24/07**

Report # **062**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	48	64
Precipitation		
Dom. wind direction	W	
Forecast; Cloudy		

Work Performed and Production Rates

Excavate full scale trench, 25 ft South of manhole F btm 1482, tos 1490. 25 ft North of manhole F btm 1482, tos 1490. Set manhole F.

Installing rails in manhole A.

Forecasted Work

Continue excavation of trench to tie in. Install railings into manhole A.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Proper lifting	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Thursday, October 25, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
James Ball Surveying

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
William Byers	Hertz
Josh Mudrick	Larry's Latrines
Ken Barone	Premier National Fuel Gas

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
NONE		

DAILY ACTIVITIES

Install sections 1 and 2 of Manhole G

Excavated approximately 50 feet of the Infiltration Trench from Manhole E to 25 feet south of Manhole E and from Manhole G to 25 feet south of Manhole G (tied into previously completed Infiltration Trench on both sides)

Backfilled 50 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone) from Manhole E to 25 feet south of Manhole E and from Manhole G to 25 feet south of Manhole G

Place approximately 50 feet of Geotextile liner over the aggregate stone spanning from Manhole E to 25 feet south of Manhole E and from Manhole G to 25 feet south of Manhole G

Install guide rails in Manhole A

Place and compact two lifts (approximately 12" loose lifts compacted to 8") of soil within 15 feet north of Manhole B and three lifts (approximately 12" loose lifts compacted to 8") within 10 feet south of Manhole B. For precise locations, see the table below.

Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (compacted lifts up to grade)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
15' N MH-B	+64" (8th lift)	7.0	136.0	10.0	123.4	90.7
10' S MH-B	+72" (9th lift)			9.9	122.4	90.0
6' S MH-B	+80" (10th lift)			9.9	126.8	93.2
5' N MH-B	+88" (11th lift)			9.0	125.3	92.1
5' S MH-B	+96" (12th lift)			9.8	124.7	91.7

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space, and Ground Disturbance.
- Review JSAs.
- Safety observation: Confined space air reading exceeded the maximum limit. Also, Compass workers were observed on the rim of Manhole A without harnesses and life lines. Stop work authority should have been exercised.
- Reminder to workers that everyone is expected to sign out at the end of each workday.

H & S Meeting at 12:45 PM

- Addition to agenda: Decon manhole equipment

• Distribute Portland back injury email from Joe Sontchi
Weekly Progress Meeting at 1:30 PM • No safety issues • Work performed • Work projected for next week • Schedule – roughly 25 days behind • Open Items • Attendees: SECOR – Ken Hannon, Srinivas Kappagantula, and Stephanie Andrews; Compass Environmental – Jerry Resnik and Terry LeMasters; On-Site – Jon Brandes • ***For more details see Weekly Progress Meeting Minutes for October 25, 2007***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1600	Silt fence to be repaired northeast of Manhole C by the power pole and southeast of Manhole D where the pea gravel (Infiltration Stone aggregate) is located.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
1315	Terry LeMasters received a list of overdue/missing submittals (updated on October 25, 2007)

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	*Submittal 044* (should be 045): Pipe Testing Plan

Signature: Stephanie L. Andrews **Date:** 10/26/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/25/07**

Report # **063**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	44	61
Precipitation		
Dom. wind direction	NW	
Forecast; Sunny		

Work Performed and Production Rates

Excavate full scale trench, 25 ft South of manhole G btm 1481.5, tos 1489. 25 ft South of manhole E 1481.5, tos 1490. Set manhole G.

Installing rails in manhole A.

Forecasted Work

Continue excavation of trench to tie in. Install railings into manhole B.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Confined space	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Friday, October 26, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
Ball Surveying
LCW / SSS

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Dave Slocum	NFG
Brandon Smith	UPS
Aubrey Williams	Horo Trucking
Jim Brewster	National Trucking

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Five pallets of Sch 80 pipe		X

DAILY ACTIVITIES
Begin installation of guide rails for pumps in Manhole B.
Excavated approximately 35 feet of the Infiltration Trench from Manhole G to 35 feet north of Manhole G (near the National Fuel Gas Line) and tied into previously completed trench. A representative of National Fuel, Dave Slocum, was on-site to oversee the excavation work near the gas line.
Backfilled 35 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone) from Manhole G to 35 feet north of Manhole G.
Place approximately 35 feet of Geotextile liner over the aggregate stone spanning from Manhole G to 35 feet north of Manhole G.
Place and compact thirteen lifts (approximately 12" loose lifts compacted to 8") of soil within 40 feet north of Manhole C. For precise locations, see the table below.
Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Infiltration Trench and the Vertical Flow Wetlands (see below for locations): Project specs require 90% (Infiltration Trench) and 95% (Vertical Flow Wetlands) of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (compacted lifts up to grade)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
West bank of cell #4 15' S of N bank	+40" (5th lift)	7.0	136.0	8.7	131.0	96.3
5' N MH-C	+8" (1st lift)			7.8	124.7	91.7
10' N MH-C	+16" (2nd lift)			7.7	126.2	92.8
15' N MH-C	+24" (3rd lift)			7.2	130.2	95.6
22' N MH-C	+32" (4th lift)			7.7	120.6	93.8
25' N MH-C	+40" (5th lift)			8.4	127.3	93.6
33' N MH-C	+48" (6th lift)			8.3	130.5	95.7
38' N MH-C	+56" (7th lift)			8.5	128.0	94.1
40' N MH-C	+64" (8th lift)			8.1	131.9	97.0
8' N MH-C	+72" (9th lift)			7.3	132.1	97.1
13' N MH-C	+80" (10th lift)			6.7	131.4	96.6
30' N MH-C	+88" (11th lift)			6.3	130.8	96.2
18' N MH-C	+96" (12th lift)			6.6	130.3	95.8
22' N MH-C	+104" (13th lift)			6.4	131.0	96.3

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights, Confined Space, and Ground Disturbance. • Review JSAs. • Equipment operators are to use precaution and workers near the manholes are required to wear the proper PPE.
H & S Luncheon at 12:00 PM • No changes to construction activities.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
0800	While backfilling around Manhole B, a large amount of pea gravel (Infiltration Trench aggregate) was dumped into the interior of the manhole. It took Compass approximately five to six hours to remove all the stone from the bottom of Manhole B. By the end of the day, Compass had the bottom tier of the guide rails mounted and drilled in place.
0915	The trench box was not used for the stretch of the Infiltration Trench where the gas line is located.
1600	Additional blocks from the previously impacted rear brick wall of the SUNY Masonry building fell off during lunch (This wall was previously impacted during trenching activities on October 1, 2007 around 1200.) Caution tape was placed around the deteriorating portion of the wall and surrounding trench area "KEEP OUT" was spray painted on the exterior walls of the building.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
	NONE

Signature: _____ **Date:** 11/05/07

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/26/07**

Report # **064**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	39	56
Precipitation		
Dom. wind direction	NW	
Forecast; Rain		

Work Performed and Production Rates

Excavating trench at gas line. Total of 35 ft excavated btm 1481.5, tos 1489.

Installing rails in manhole B.

Forecasted Work

Continue excavation of trench to tie in. Install railings into manhole B.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Severe weather	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, October 29, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
Ball Surveying

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Rick Newhard	Mabey Trucking
Brenda Grover	Grover Toilets
Mike Petrusino	Horo Trucking
Brandon Smith	UPS
John Hardy	Vantage Equipment
Kurt Matteson	USPS

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Sheet pile material and driver		X

DAILY ACTIVITIES

Continue to install guide rails in Manhole B.

Pump out Manholes C, D and E.

Install sections 3 and 4 of Manhole E.

Trenched north of Manhole E under the central storm sewer, backfilled with gravel and initial soil lift. This reportedly finished the trenching and backfilling (except the two building areas that must use the sheet piling).

Place and compact ten lifts (approximately 12" loose lifts compacted to 8") of soil – *without* flyash – within 162 feet south of Manhole D. For precise locations, see the table below.

Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (compacted lifts up to grade)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
65' S MH-D	+8" (1st lift)	7.0	136.0	8.6	122.4	90.0
135' S MH-D	+16" (2nd lift)			9.7	127.2	93.5
58' S MH-D	+24" (3rd lift)			7.9	124.8	91.8
92' S MH-D	+32" (4th lift)			7.6	130.4	95.9
129' S MH-D	+40" (5th lift)			9.5	128.7	94.6
70' S MH-D	+48" (6th lift)			8.0	124.7	91.7
150' S MH-D	+56" (7th lift)			9.3	131.4	96.6
54' S MH-D	+64" (8th lift)			10.0	122.5	90.1
98' S MH-D	+72" (9th lift)			8.2	122.4	90.0
162' S MH-D	+80" (10th lift)			8.8	122.7	90.2

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space, and Ground Disturbance.
- Review JSAs.
- Frost precautions.
- Reminder to all workers to keep their safety glasses on at all times.

H & S Meeting at 12:45 PM • No changes to construction activities.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	NONE

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
1155	SECOR QA Official spoke with Terry LeMasters regarding the Pipe Testing Plan submittals. The dates on *Submittal 044: Pipe Testing Plan* and *Submittal 055: Revised Pipe Testing Plan* are out of sequence – September 13, 2007 and September 17, 2007, respectively. Also, the copy received on Thursday from Jerry Resnik, the cover page for Submittal 044 and the Revised Pipe Testing Plan do not coincide with Submittal 044's description. Terry will look into this after lunch.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	BOL for the delivery of Sections 2 and 4 of Manhole F and Sections 1 and 2 of Manhole G
2	BOL for five pallets of ACH 80 piping via National Pipe and Plastic, Inc.
3	ATL testing documentation for compaction testing conducted on October 25, 2007
4	ATL testing documentation for compaction testing conducted on October 26, 2007
5	BOL for pea gravel (Infiltration Trench aggregate) received on October 23, 2007
6	Daily QA Report for October 24, 2007
7	Daily QA Report for October 25, 2007

Signature: Stephanie L. Andrews **Date:** 11/01/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/29/07**

Report # **065**

Project # **22070706R**

Weather		
	Daily Low	Daily High
Average Temp.	27	52
Precipitation		
Dom. wind direction	NW	
Forecast; Sunny		

Work Performed and Production Rates

Tied manhole E in on the North side 30 ft total btm 1481.5, tos 1490. Cleaned sediment and water out of manhole C, D, and E.

Installing rails in manhole C.

Forecasted Work

Install shoring along Suny building, continue installing rails in manholes.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Hypothermia	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose
Shoring for Suny bldg	Mabey shoring	3 loads	

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Tuesday, October 30, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
LCW / SSS

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Joe Schench	Mabey Bridge and Shore, Inc.
Jay Knapp	Shorts
Corbin Short	Shorts
Kevin Glaser	NYSDEC
Frank Shaffer	Lukehart Trucking

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Section 3 of Manhole F		X
Section 3 of Manhole G		X
Twenty-five (25) steps for Manhole G		X
Seven (7) manhole covers		X

DAILY ACTIVITIES

Installed Sheet Pile Driver on Caterpillar Excavator 330C.

Move shoring materials delivered yesterday to SUNY heavy equipment building.

Drove the first wall of sheet piling next to SUNY heavy equipment building. (Will still need to drive a second wall ~7' east of the wall and install internal bracing as excavation occurs. This will occur incrementally as the excavation will be occurring in 20' steps (matching the excavator reach)).

Install guide rails in Manhole C.

Prep fly ash and soil at Manhole G to be used as backfill tomorrow, October 30, 2007.

Place and compact one lifts (approximately 12" loose lifts compacted to 8") of soil – *without* flyash – within 25 feet south of Manhole D; three lifts (approximately 12" loose lifts compacted to 8") of soil – *without* flyash – within 12 feet north of Manhole E; and three lifts (approximately 12" loose lifts compacted to 8") of soil – *without* flyash – within 10 feet south of Manhole E. For precise locations, see the table below.

Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (compacted lifts up to grade)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
25' S MH-D	+88" (11th lift)	7.0	136.0	9.3	122.4	90.0
12' N MH-E	+8" (1st lift)			9.7	126.5	93.0
8' N MH-E	+16" (2nd lift)			9.2	125.7	92.4
4' S MH-E	+24" (3rd lift)			10.0	122.4	90.0
6' S MH-E	+32" (4th lift)			9.9	124.3	91.4
6' N MH-E	+40" (5th lift)			9.6	124.0	91.2
10' S MH-E	+48" (6th lift)			8.4	123.4	90.7

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space, and Ground Disturbance.

• Review JSAs. • Beware of black ice in the morning while driving to the Site.
H & S Meeting at 12:45 PM • No changes to construction activities. • Review shoring procedures.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1600	Groundwater was pumped out of Manhole E yesterday, October 29, 2007; however, groundwater has infiltrated into the manhole up to Section 2 (as observed today). The manhole will need to be re-pumped in order to install the guide rails.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
1550	SECOR QA Official informed Terry LeMasters that all the required submittals for Specification 11285: Weir and Sluice Gates have been received.
1730	Compass has not yet submitted information on the rip-rap to be placed at the sedimentation pond (anticipated delivery date: October 30, 2007).

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily QA Report for October 26, 2007
2	Daily QA Report for October 29, 2007
3	Weir & Sluice Gate submittals (as indicated on the overdue/missing submittal list given to Terry LeMasters last Thursday, October 25, 2007)
4	*Submittal 067:* Soil Excv/Haul Proc and Summ
5	ATL documentation for compaction testing performed on October 29, 2007
6	ATL documentation for compaction testing performed on October 30, 2007
7	BOL for Section 3 of Manhole F, Section 3 of Manhole G and 25 steps for Manhole
8	BOL for seven manhole covers
9	BOL for delivery of Items 7 and 8
10	BOL for Mabey shoring equipment received on October 29, 2007

Signature: Stephanie R. Andrews **Date:** 11/01/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Wednesday, October 31, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Joe Schench	Mabey Bridge and Shore, Inc.
Jeff Hitchcock	Howgen
Fred Williams	Howgen
Greg Nickerson	Howgen
John Payne	Howgen
Phil Tidd	Howgen
Ron Groux	Howgen
Dave Heater	Hertz
Brandon Smith	UPS
Mike Thompson	Shorts
Lee Cozzort	Harlan Electric
Kevin Hart	Harlan Electric

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Ten (10) loads of rip-rap – approximately 220.36 tons		X
Three (3) loads of pea gravel (Infiltration Trench aggregate) – approximately 107.89 tons; all passed jar test		X

DAILY ACTIVITIES

Grade area north of treatment plant building fencing. Removed some of the soft wet rockier soils and replaced with dryer soils with less rock; however, rocks still exist in surface soils. Area is ready for hydro seeding which is projected for Friday – weather permitting.

Complete the installation of guide rails in Manhole C and Manhole D. Begin to install guide rails in Manhole F.

Installation of the eastern sheet pile wall next to the SUNY heavy equipment building. (The western most sheet pile wall was initially installed along the entire length of the SUNY building between the trench and the building. This western wall will be held to prevent any movement of the SUNY building.) The eastern sheet pile wall is being installed in approximately 20-foot sections to allow the excavator to set at the end of this wall and dig the trench at a slight angle.

Assemble bracing prior to being placed within the sheet pile walls during excavation. As excavation proceeds bracing is installed at 4' and 12' depths between the sheet piling. The braces are large steel beams (whalers) pressed against the sheet piling by heavy metal expandable screw jacks (JC Struts).

Excavated to a depth of approximately 12 feet within 20 feet of the Infiltration Trench from the northern most end of the SUNY heavy equipment building.

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space, and Ground Disturbance.
- Review JSAs.
- Stone to be delivered today – rip-rap and pea gravel (Infiltration Trench aggregate).

H & S Meeting at 12:45 PM

- No changes to construction activities.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS

1530	Guide rails were not installed in Manhole E due to significant leakage along the lower manhole ring.
1730	The sheet piling was placed too far apart (approximately four feet) for the supplied expandable screw jack braces (JC Struts). The extra JC Struts will be utilized along with longer bolts to allow the bracing to expand tightly against the sheet piling walls.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily QC Report for October 30, 2007

Signature: Stephanie L. Andrews **Date:** 11/07/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **10/31/07**

Report # **067**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	33	56
Precipitation		
Dom. wind direction	NW	
Forecast; Sunny		

Work Performed and Production Rates

Backfilling trench, continue installing shoring for Suny building.

Installing rails in manhole D,F

Forecasted Work

Install shoring along Suny building, continue installing rails in manholes.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Pinch points	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Thursday, November 1, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
LCW / SSS

VISITORS	
Name	***Company***
Bill Tidd	Howgen
Tim Cleary	Atlantic Testing
Brandon Smith	UPS
Kurt Matteson	USPS
Andy Conney	Sunny Hill Enterprises

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
One (1) tri-axel loads of rip-rap – approximately 22.80 tons		X

DAILY ACTIVITIES

Continue the installation of the eastern sheet pile wall next to the SUNY heavy equipment building. (The western most sheet pile wall was initially installed along the entire length of the SUNY building between the trench and the building. This western wall will be held to prevent any movement of the SUNY building.) The eastern sheet pile wall is being installed in approximately 20 sections to allow the excavator to set at the end of this wall and dig the trench at a slight angle.

Excavated the second 20-foot section south of the northern most end of the SUNY heavy equipment building. (Total distance along SUNY heavy equipment building excavated to-date: approximately 40 feet.)

Backfilled approximately 40 feet of the Infiltration Trench excavated today and yesterday with pea gravel (aggregate stone) from the northern most end of the SUNY heavy equipment building.

Place approximately 40 feet of Geotextile liner over the aggregate stone spanning from the northern most end of the SUNY heavy equipment building.

Complete guide rail installation in Manhole F and begin to install guide rails in Manhole G.

Continue to excavate Surface Flow Wetlands. Soil excavated from this area is being used as backfill at Manhole F and Manhole G.

Place and compact three lifts (approximately 12" loose lifts compacted to 8") of soil at depths of +24", +32" and +48" up to grade – containing flyash – within five feet north of Manhole G; three lifts (approximately 12" loose lifts compacted to 8") of soil at depths +8", +16", and +40" up to grade – containing flyash – within five feet south of Manhole G; two lifts (approximately 12" loose lifts compacted to 8") of soil – *without* flyash – within six feet north of Manhole G; and two lifts (approximately 12" loose lifts compacted to 8") of soil – *without* flyash – within four feet south of Manhole G. Place and compact three lifts (approximately 12" loose lifts compacted to 8") of soil – *without* flyash – within six feet north of Manhole F; and three lifts (approximately 12" loose lifts compacted to 8") of soil – *without* flyash – within twelve feet south of Manhole F. For precise locations, see the table below.

Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Infiltration Trench (see below for locations):

Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (compacted lifts up to grade)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
2' S MH-G	+8" (1st lift)	9.5	121.0	12.5	116.3	96.1
3' S MH-G	+16" (2nd lift)			12.4	108.9	90.0
5' N MH-G	+24" (3rd lift)			12.5	109.0	90.1
3' N MH-G	+32" (4th lift)			12.4	109.1	90.2
5' S MH-G	+40" (5th lift)			12.3	108.9	90.0
2' N MH-G	+48" (6th lift)			12.1	109.3	90.3
6' N MH-G	+56" (7th lift)	~~7.0~~	~~136.0~~	8.2	124.2	91.3

	4' S MH-G	+64" (8th lift)			7.9	125.8	92.5	
	3' S MH-G	+72" (9th lift)			7.1	126.6	93.1	
	2' N MH-G	+80" (10th lift)			6.2	126.3	92.9	
	6' N MH-F	+56" (7th lift)			10.0	126.2	92.8	
	5' S MH-F	+64" (8th lift)			9.8	126.8	93.2	
	3' N MH-F	+72" (9th lift)			10.0	126.3	92.9	
	7' S MH-F	+80" (10th lift)			9.5	128.7	94.6	
	12' S MH-F	+88" (11th lift)			9.1	128.2	94.3	
	4' N MH-F	+96" (12th lift)			9.0	128.8	94.7	

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Working at Heights, Confined Space, and Ground Disturbance.
- Review JSAs.
- Use caution when driving or walking on wet surfaces.
- Stone will be delivered – rip-rap.

H & S Meeting at 12:45 PM

- No changes to construction activities.
- Driving reminders handout.

Weekly Progress Meeting at 1:30 PM

- No safety issues
- Work performed
- Work projected for next week
- Schedule – roughly 25 days behind
- Open Items
- Attendees: SECOR Engineering, P.C.– Ken Hannon (via conference call), Stuart Klaus, and Stephanie Andrews; Compass Environmental, Inc. – Jerry Resnik and Terry LeMasters; On-Site – Jerry Palmer
- ***For more details see Weekly Progress Meeting Minutes for November 1, 2007***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS

	NONE

DESIGN CONCERNS AND RESOLUTIONS

	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS

	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED

1	Weekly QA Report for 10/29 to 11/01
2	Sampling spreadsheet for pea gravel (Infiltration Trench aggregate) received on October 31, 2007
3	BOL for pea gravel (Infiltration Trench aggregate) received on October 31, 2007
4	BOL for rip-rap received on October 31, 2007
5	BOL for rip-rap received today
6	*Submittal 008A* – Valves
7	*Submittal 008Plastic* – Plastic Valves
8	*Submittal 068* – Seed and Fertilizer – Current Controls area
9	*Submittal 069* – Disposal Facility Permit
10	*Submittal 070* – Aluminum Hatch Sample
11	*Submittal 071* – Fencing Concrete Properties
12	Compass liner acceptance letter

Signature: _____ **Date:** 11/07/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **11/1/07**

Report # **068**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	31	62
Precipitation		
Dom. wind direction	NW	
Forecast; Sunny		

Work Performed and Production Rates

Backfilling trench, Excavating trench along Suny building. Having to put thick bridge in over stone by manholes F and G due to high water table.

Installing rails in manhole E, G

Forecasted Work

Install shoring along Suny building, continue installing rails in manholes.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Seat belts	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes				
Name	**Company**	**Title**	**Mobilization**	**Demobilization**
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries			
Description	Mobilization	Demobilization	Comments
***Material Shipped Offsite**			

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Friday, November 2, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.

VISITORS	
Name	***Company***
William Byers	Hertz
Tim Cleary	Atlantic Testing
Chris Preischel	Preischel Bro.
Josh Mudrick	Larry's Latrines
Doug Hunt	Allegany Landscape
Daryl Hunt	Allegany Landscape
Daniel Hunt	Allegany Landscape
Ronald Grelser	Allegany Landscape

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Hertz John Deere 250D Off-Road Haul Truck	X	

DAILY ACTIVITIES
Continue the installation of the eastern sheet pile wall next to the SUNY heavy equipment building.
Excavated the third 20-foot section 100 feet south of Manhole C to the south end of the SUNY heavy equipment building. (Total distance along SUNY heavy equipment building excavated to-date: approximately 60 feet.)
Backfilled approximately 20 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone) 100 feet south of Manhole C to the south end of the SUNY heavy equipment building.
Place approximately 20 feet of Geotextile liner over the aggregate stone spanning 100 feet south of Manhole C to the south end of the SUNY heavy equipment building.
Removed eastern sheet pile wall from the portion of the Infiltration Trench excavated on Wednesday, October 31, 2007.
Complete guide rail installation in Manhole G.
Set Section 4 of Manhole H.
Mulch and hydroseed area 200 feet north of Manhole A to Manhole B. The amount of rocks present in the surface soils is not acceptable for a final grade. This area will need to be revisited in the spring to be rockhounded, compacted and raked.
Repair North and South Storm Sewer lines located approximately 100 feet north of Manhole D and approximately 120 feet south of Manhole F, respectively.
Decon Volvo A35D Off-road haul truck
Place and compact one lift (12" loose lift compacted to 8") of soil – *without* flyash – within seven feet north of Manhole E; one lift (12" loose lift compacted to 8") of soil – *without* flyash – within five feet south of Manhole E; and, one lift of soil – containing flyash – at 4 feet below ground surface and five feet south of the eastern sheet pile wall at the SUNY heavy equipment building. For precise locations, see the table below.
Compaction testing conducted by Atlantic Testing Laboratories (ATL) on Infiltration Trench (see below for locations): Project specs require 90% of the maximum dry density, as determined by ASTM D 698.

Test Location	Elevation (compacted lifts up to grade)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
7' N MH-E	+64" (8th lift)	7.0	136.0	8.4	124.0	91.2
5' S MH-E	+ 72" (9th lift)			8.0	122.5	90.1
5' S, 8' E of E wall of SUNY	-4' bgs	9.5	121.0	11.9	114.5	94.6

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights, Confined Space, and Ground Disturbance. • Review JSAs.
H & S Luncheon at 12:00 PM • No changes to construction activities. • Weekend vehicle driving safety.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	NONE

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	*Submittal 072:* Liner Installation Warranty
2	Daily QC Report for October 31, 2007
3	Daily QC Report for November 1, 2007
4	ATL documentation for compaction testing performed on November 1, 2007

Signature: Stephanie L. Andrews **Date:** 11/07/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **11/2/07**

Report # **069**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	33	60
Precipitation		
Dom. wind direction	NW	
Forecast; Sunny		

Work Performed and Production Rates

Backfilling trench completed excavating trench along Suny building.

Forecasted Work

Install shoring along masonry building, remove trees from East side of trench along river.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Proper PPE	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Material Deliveries			
Material type	Vendor	Quantity	Purpose

*Equipment used	
	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

*Submittals	Transmittal	Section	Subsection	ID

*Analytical Data	Sample ID	Type	Number of Pages	Provider

*Erosion Control	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, November 5, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
LCW / SSS
Ball Surveying

VISITORS	
Name	***Company***
Dan Meehan	UPS
Bruce Cady	Shorts
David Campbell	M&T Trucking

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*

DAILY ACTIVITIES
Removed vegetation along haul road. While clearing the haul road on September 12, 2007, trees and other debris leaning on the abandoned barrel house were removed and shifted to the east side of the trail among other vegetation. These trees/debris were marked with orange dots and removed.
Remove eastern sheet pile wall at the SUNY heavy equipment building and transport to the SUNY Masonry building.
Installation of the western and eastern sheet pile wall (approximately 30 feet, each) next to the SUNY Masonry building (about 30 feet south of Manhole E). The western wall will be held to prevent any movement of the SUNY building. The eastern sheet pile wall, driven approximately seven feet from the western sheet pile wall, will serve as a barrier for the bracing spanning from the western sheet pile wall to the eastern sheet pile wall.
Excavated to a depth of approximately 12 feet along the 30-foot span of the SUNY Masonry building that was not completed due to the collapse of the rear brick wall on October 1, 2007. See the Daily QA Report for October 1, 2007 for more information.
Continue to backfill, compact and grade the soil over the South Storm Sewer line (roughly 36" diameter) located approximately 120 feet south of Manhole F.
Compact and grade the soil over the North Storm Sewer line (roughly 36" diameter) located approximately 100 feet north of Manhole D.
Backfill approximately 60 feet of the Infiltration Trench along the SUNY heavy equipment building.
Place rip-rap on the eastern bank of the Sedimentation Pond between Geomembrane panel number 26 (P#26) and Geomembrane panel number 3 (P#3). (For a detailed panel layout, see *Submittal 074*: Landsaver Liner Doc.)
Continue to decon Volvo A35D Off-road haul truck.

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights, Confined Space, and Ground Disturbance. • Review JSAs.
H & S Meeting at 12:45 PM • No changes to construction activities. • 'Care for your back' handout.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1055	Groundwater has been pumped out of Manhole H; however, additional groundwater is infiltrating through the grouting at the corrugated outlet piping extending to the south of Manhole H.
1630	Thunder and lightening at the south end of the Site shut down construction for the day.

DESIGN CONCERNS AND RESOLUTIONS	
1700	SECOR RE identified where piezometers are to be located. Ball Surveying was on-site to stake out the designated locations.

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily Report for November 2, 2007
2	ATL testing documentation for compaction testing performed on November 2, 2007

Signature: Stephanie L. Andrews **Date:** 11/06/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **11/5/07**

Report # **070**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	34	51
Precipitation		
Dom. wind direction	NW	
Forecast; Rain		

Work Performed and Production Rates

Backfill excavation along back of Suny building. Install shoring along back of masonry building. Started rip rap in sed pond.

Forecasted Work

Decon frac tank, start decon of equipment. Complete excavation behind masonry building.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Slips trips and falls	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Tuesday, November 6, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
Ball Surveying

VISITORS	
Name	***Company***
Robert Lucciano	Osmo
William Meck	Osmo
Rodger Fanton	Fanton's Clay
Kevin Glaser	NYSDEC
Dan Sheu	Sheu's Septic

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
NONE		

DAILY ACTIVITIES
Continue to excavate the Infiltration Trench to the designated depth of 18 feet along the 30-foot span of the SUNY Masonry building that was not completed due to the collapse of the rear brick wall on October 1, 2007.
Backfill approximately 30 feet of the Infiltration Trench with pea gravel (aggregate stone) along the 30-foot span of the SUNY Masonry building (approximately 30 feet south of Manhole E to 60 feet south of Manhole E).
Place approximately 30 feet of Geotextile liner over the aggregate stone spanning along the 30-foot span of the SUNY Masonry building (approximately 30 feet south of Manhole E to 60 feet south of Manhole E).
Remove the 30-foot eastern sheet pile wall and 30-foot western sheet pile wall along the SUNY Masonry building.
Continue to backfill, compact and grade the soil over the South Storm Sewer line (roughly 36" diameter) located approximately 120 feet south of Manhole F.
Compact and grade the soil over the North Storm Sewer line (roughly 36" diameter) located approximately 100 feet north of Manhole D.
Finish placing rip-rap on the banks of the Sedimentation Pond between Geomembrane panel number 3 (P#3) and Geomembrane panel number 24 (P#24). (For a detailed panel layout, see *Submittal 074*: Landsaver Liner Doc.)
Fill Sedimentation Pond with two feet of water. The water was pumped from the fire hydrant located adjacent to the red barn to the Sedimentation Pond via water hoses supplied by Wellsville's Fire Department.
Finish deconing Volvo A25D Off-road haul truck.
Decon Cat 345 C excavator, roller and frac tank.
Install three (3) piezometers, PZ-7 thru PZ-9. (See Design Concerns and Resolutions below for locations.)
Service power polls on-site.

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Working at Heights, Confined Space, and Ground Disturbance. • Review JSAs. • Review stop work authority and safety partner program.
H & S Meeting at 12:45 PM • No changes to construction activities. • "Burned by Cement' article. • Operators are not to run over the water hoses running from the fire hydrant adjacent to the red barn to the Sedimentation Pond.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1600	In order for the water balance testing apparatus to be placed in the Sedimentation Pond, rip-rap was not placed on Geomembrane panel number 25 (P#25). (For a detailed panel layout, see *Submittal 074*:

	Landsaver Liner Doc.)

DESIGN CONCERNS AND RESOLUTIONS	
1500	Piezometers were installed at the following locations, in conjunction with drawings C-11A: ➢ *PZ-9:* Station 31+00 (100 feet north of Manhole A) to a depth of 21.0 feet. ➢ *PZ-8:* Station 28+00 (halfway between Manhole A and Manhole B) to a depth of 19.0 feet. ➢ *PZ-7:* Station 24+00 (halfway between Manhole B and Manhole C) to a depth of 19.0 feet.

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
0840	SECOR QA Official gave Terry LeMasters a list of submittals received by SECOR that are missing cover sheets.
1300	Received cover sheets from Jerry Resnik in reference to the list as mentioned above.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily Report for November 5, 2007
2	Cover sheet for *Submittal 073:* Manhole A-G Detail
3	Cover sheet for *Submittal 074:* Landsaver Liner Doc
4	Cover sheet for *Submittal 075:* Manhole Box Cert.
5	Cover sheet for *Submittal 076:* Fontaine-Corp Cert
6	Cover sheet for *Submittal 077:* Sed Liner – Resin and Carbon Black
7	Cover sheet for *Submittal 078:* Engineering Package
8	Cover sheet for *Submittal 079:* Fontaine – ISO 9001
9	Cover sheet for *Submittal 080:* Fontaine – Material Compliance
10	Cover sheet for *Submittal 081:* Fontaine – Mfg. Quals
11	Cover sheet for *Submittal 082:* Compass Liner Acceptance
12	Cover sheet for *Submittal 083:* Disposal Docs

Signature: Stephanie L. Andrews **Date:** 11/07/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **11/6/07**

Report # **071**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	33	46
Precipitation		
Dom. wind direction	NW	
Forecast; Snow		

Work Performed and Production Rates

Installed shoring in masonry building. Removed shoring from back of masonry building. Deconed 30 ton off road truck, deconed roller.

Deconed frac tank.

Forecasted Work

Continue decon, install water balance equipment into pond.

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Cold Stress	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Wednesday, November 7, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
LCW / SSS

VISITORS	
Name	***Company***
David Campbell	M&T Trucking
Mike Saeli	Nature's Way
Mike Schuehardt	Nature's Way
Chris Mucha	DeTech
Bob Brosky	Horo Trucking
Aubrey Williams	Horo Trucking
Robert Jennings	Horo Trucking
Jody Forster	Godwin Pumps

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Cat 345 C Excavator	X	
Sheet pile materials and driver	X	
Roller	X	

DAILY ACTIVITIES
Finish decontamination of Cat 345 C excavator.
Decontamination of Volvo A35D Off-road haul truck and sheet pile materials.
Install four (4) piezometers, PZ-6 thru PZ-3 and begin to install PZ-1. (See Design Concerns and Resolutions below for locations.)
Excavate, form and pour concrete footer along the SUNY Masonry building.
Place Manhole cover G and Manhole cover H.
The water balance testing apparatus was placed in the northeast corner of the Sedimentation Pond.

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Confined Space and Ground Disturbance. • Review JSAs.
H & S Meeting at 12:45 PM • No changes to construction activities. • Movie clip of confined space deaths.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1300	Piezometer 2 (PZ-2) was skipped due to the close proximity of the haul road.

DESIGN CONCERNS AND RESOLUTIONS	
1500	Piezometers were installed at the following locations, in conjunction with drawings C-11A: ➢ PZ-6: Station 20+00 (halfway between Manhole C and Manhole D) to a depth of approximately 20 feet 4 inches. ➢ PZ-5: Station 16+00 (halfway between Manhole D and Manhole E) to a depth of approximately 17 feet 9 inches. ➢ PZ-4: Station 12+00 (halfway between Manhole E and Manhole F) to a depth of approximately 19 feet 9 inches. ➢ PZ-3: Station 8+00 (halfway between Manhole F and Manhole G) to a depth of approximately 20.0 feet.

	➢ PZ-1: Station 1+00 (100 feet south of Manhole H) to a depth of approximately 15 feet 7 inches.

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
1000	SECOR QA Official asked Terry LeMasters for any BOLs and/or other shipment tickets for materials arrived/shipped off site.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily QC Report for November 6, 2007
2	Submittal Register (Submittals 001 thru 083)
3	Weekly QC Report for November 5, 2007 to November 8, 2007
4	ATL soils report from October 9, 2007 to November 1, 2007

Signature: Stephanie L. Andrews **Date:** 11/26/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Thursday, November 8, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
LCW / SSS

VISITORS	
Name	***Company***
Robert Speers	Mendon Trucking
Mike Schukhardt	Nature's Way
Mike Saeli	Nature's Way
Tom Dell	Howgen
Brandon Smith	UPS
Sean Mudrick	Larry's Latrines
Kurt Matteson	USPS

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Two (2) truckloads of crushed gravel		X
Fencing materials		X

DAILY ACTIVITIES
Crushed stone was placed over the pea gravel initially paced on the Current Controls driveway.
Recover and repair wells located behind Current Controls. (See Site/Construction Concerns and Resolutions below.)
Finish decontamination of the A35 D off-road haul truck.
Decontamination of the Cat 330 L excavator, 250 D off-road haul truck, and water hoses (property of Wellsville's Fire Department).
Remove sandbags from the bottom of the Sedimentation Pond.
Water balance testing apparatus was moved to the deeper portion of the pond – located in the northeast corner of the Sedimentation Pond.
Rip-rap was place on Geomembrane panel 25 (P#25). This completes the placement of rip-rap around the Sedimentation Pond.
Finish installing PZ-1 and install PZ-2. (See Design Concerns and Resolutions below for locations.)

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Confined Space and Ground Disturbance. • Review JSAs. • Reminder that anyone entering the Sedimentation Pond is entering a confined space and must wear a PFD when 10 feet within the waterline.
H & S Meeting at 12:45 PM • No changes to construction activities.
Weekly Progress Meeting at 1:35 PM • No safety issues • Work performed • Work projected for next week • Schedule – roughly 25 days behind • Open Items • Attendees: SECOR Engineering, P.C.– Ken Hannon, Stuart Klaus, and Stephanie Andrews; Compass Environmental, Inc. – Jerry Resnik; On-Site Technical Service, Inc. – Jerry Palmer and Jon Brandes • ***For more details see Weekly Progress Meeting Minutes for November 8, 2007***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
0900	While backfilling and grading the soil behind Current Controls on October 31, 2007, (from Manhole A to approximately 200 feet south of Manhole A) two wells were covered and inaccessible. Compass removed the backfill and repaired the wells as requested by Scott Watson (On-Site).

DESIGN CONCERNS AND RESOLUTIONS	
1500	Piezometers were installed at the following locations, in conjunction with drawings C-11A: ➢ PZ-2: Station 4+00 (halfway between Manhole G and Manhole H) to a depth of approximately 18 feet 4 inches. ➢ PZ-1: Station 1+00 (100 feet south of Manhole H) to a depth of approximately 15 feet 7 inches.

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
1300	SECOR QA Official spoke to Terry LeMasters in regards to the ATL soil testing documentation that was submitted on November 7, 2007. There are some discrepancies that need to be clarified.

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily QC Report for November 7, 2007

Signature: Stephanie L. Andrews **Date:** 11/09/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **11/8/07**

Report # **073**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	28	37
Precipitation		
Dom. wind direction	NW	
Forecast; Cloudy		

Work Performed and Production Rates

Decon equipment, drillers installing piezometers. Fixing drive at Current Controls area.

Forecasted Work

Continue decon

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Seat belts	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	11/6/07
Terry Gilpin	Compass Environmental	Laborer	8/6/07	
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	11/6/07
Charles Thomas	Compass Environmental	Laborer	9/10/07	
Ben Rau	Compass Environmental	Operator	9/10/07	
James Henderson	Compass Environmental	Laborer	10/15/07	11/3/07

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

	Transmittal	Section	Subsection	ID
***Submittals**				

	Sample ID	Type	Number of Pages	Provider
***Analytical Data**				

	Inspection #	Repairs Required?	Description and Location of Repairs
***Erosion Control**			

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Friday, November 9, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
LCW / SSS

VISITORS	
Name	***Company***
Kyle Savage	Nature's Way
Mike Saeli	Nature's Way
Ron Mohn	Nason's Delivery
Robert Speers	Mendon Trucking
Noem Braun	Pariso Inc.
Bruce Capy	Shorts
Mike Schamber	Pariso Inc.
Nordan Allard	Fassett Lane
Dennis Warnox	Fassett Lane

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Water hoses (courtesy of Wellsville's Fire Department)	X	
Concrete blocks and other materials for the repair of the SUNY Masonry building		X

DAILY ACTIVITIES
Decon 700H dozer and 230 excavator. (Equipment remaining on Site: 700H dozer, 230 excavator, and the front end loader.)
Install temporary orange fencing along the utility trench.
Move equipment and materials to the small red barn located near Manhole H.
Continue to conduct water balance test at the Sedimentation Pond (Day 2).
Form and pour concrete piezometer surface blocks.

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Confined Space and Ground Disturbance. • Review JSAs.
H & S Luncheon at 12:00 PM • No changes to construction activities.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1415	Piezometer 5 (PZ-5), as well as the 3-4-foot survey stake, spray painted orange and marked with an orange flag, used to mark the well location, could not be located – the top of the surface protector was all that was found. Compass searched for the well and could not find it. Compass contacted Nature's Way and they will be on-site Monday, November 12, 2007 to re-drill the well.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
	NONE

Signature: Stephanie L. Andrews **Date:** 10/26/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Daily Construction Quality Assurance Report

Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

Date: **11/9/07**

Report # **074**

Project # **22070706R**

Weather

	Daily Low	Daily High
Average Temp.	29	44
Precipitation		
Dom. wind direction	NW	
Forecast; Cloudy		

Work Performed and Production Rates

Decon equipment, drillers installing piezometers.

Forecasted Work

Continue decon, start temp and permanent fence installation

Field Discrepancies

Meetings

Topic	Companies Represented	Description
Equipment inspections	Secor, Onsite Safety, Compass Environmental	Morning safety meeting

Visitors

Name	Company	Purpose of Visit

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report
Compass Environmental Incorporated
Sinclair Refinery
Wellsville, NY

*Personnel Changes

Name	Company	Title	Mobilization	Demobilization
Terry Lemasters	Compass Environmental	QC Manager	7/23/07	
Jerry Resnick	Compass Environmental	Project Manager	7/23/07	
Mike Vails	Compass Environmental	Superintendent	7/23/07	
Pete Mosca	Compass Environmental	Project accountant	7/23/07	11/9/07
Adam Calvaledge	Compass Environmental	Safety officer	7/23/07	9/10/07
Matt Edwards	Compass Environmental	Laborer	7/23/07	8/12/07
Justin Spencer	Compass Environmental	Laborer	7/23/07	
Sergio Sarmiento	Compass Environmental	Laborer	7/23/07	11/6/07
Terry Gilpin	Compass Environmental	Laborer	8/6/07	11/9/07
Don Anderson	Compass Environmental	Operator	8/6/07	8/24/07
Mike Forman	Compass Environmental	Laborer	8/6/07	8/24/07
Shane Christian	Compass Environmental	Laborer	8/6/07	
Hiram Williams	Compass Environmental	Laborer	8/6/07	9/10/07
Todd Weaver	Compass Environmental	Operator	9/5/07	11/6/07
Charles Thomas	Compass Environmental	Laborer	9/10/07	11/9/07
Ben Rau	Compass Environmental	Operator	9/10/07	11/9/07
James Henderson	Compass Environmental	Laborer	10/15/07	11/3/07

*Equipment Deliveries

Description	Mobilization	Demobilization	Comments

*Material Shipped Offsite

* indicates addition tracking methods available upon request

Daily Construction Quality Assurance Report

Compass Environmental Incorporated

Sinclair Refinery

Wellsville, NY

***Material Deliveries**

Material type	Vendor	Quantity	Purpose

***Equipment used**	700 Johne Deere dozer
	345 Excavator
	330 Cat excavator
	John Deere off road truck
	924 loader
	2 Volvo off road trucks

***Submittals**	Transmittal	Section	Subsection	ID

***Analytical Data**	Sample ID	Type	Number of Pages	Provider

***Erosion Control**	Inspection #	Repairs Required?	Description and Location of Repairs

Site Representative Signature Terry Lemasters

* indicates addition tracking methods available upon request

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, November 12, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
LCW / SSS
Ball Surveying

VISITORS	
Name	***Company***
Eric Kurtz	Milton Cat
Brenda Grover	Grover Toilets
Mike Saeli	Nature's Way
Kyle Savage	Nature's Way
Mark Harris	Second Chance Transportation

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Shoring equipment	X	

DAILY ACTIVITIES
Cap HDPE pipe ends.
Repair silt fence around the soil staging area and along the Infiltration Trench, as indicated during the Site Walk.
Install four orange survey stakes over the bridge of soil covering the four HDPE pipes to identify the crossing after snow covers the ground.
Install Piezometer 5 (PZ-5). (See Design Concerns and Resolutions below for locations.)
Continue to conduct water balance test at the Sedimentation Pond (Day 5).
Install wire fabric temporary fencing in predetermined areas for the course of the winter.

MEETINGS

H & S Meeting at 7:00 AM

- Announce agenda for the day (see daily activities).
- Discuss safety concerns and precautions.
- Permits: Ground Disturbance.
- Review JSAs.

H & S Meeting at 12:45 PM

- No changes to construction activities.

Site Walk at 1:30 PM

- Attendees: SECOR Engineering, P.C.– Ken Hannon and Stuart Klaus; Compass Environmental, Inc. – Jerry Resnik, Terry LeMasters and Mike Vails; On-Site Technical Service, Inc. – Jerry Palmer and Jon Brandes
- Driven steel post with wire fabric temporary fencing is being installed along the trail. Several places will be fenced off over the next week from around Manhole "B" on the northern part of the site, south to the covered bridge at the extreme southwestern end of the site. Fencing needs specifically noted during the walk around included; temp fencing near the covered bridge to block off the trail, a gate will be installed in the current opening near the Sediment Pond, removal of some temp fencing near the gate by Manhole "H", and several other areas along the back of the SUNY college.
- Drillers will be finalizing the well pads today; well development is scheduled for tomorrow.
- The solid waste dumpster is scheduled to be hauled off by the waste company tomorrow.
- The tin removed from demolition activities needs weighted down to keep it from blowing around.
- Jerry Palmer (On-Site) will shut the water off to the buildings at the meter after we leave and prior to freezing conditions.
- Silt fencing needs include; gaps filled in around the large soil stockpile, places the fence needs to be propped up or replaced along the river near the haul road, and some needs removed near the gate by Manhole "H".
- The large above ground temporary fuel tank will be de-mobed tomorrow.
- The remaining two partial rolls of HDPE liner near the wetlands area are remnants not worth worrying

about.

- The sedimentation pond will be left as is for the winter (with approximately 2 feet of water in the bottom of the pond); Compass determined this course of action and noted that they are responsible for the liner condition through the winter. Following the water balance test and receipt of the warranty submittal, Atlantic Richfield Company may provide documentation that the liner is accepted in accordance with the specifications. Compass will then begin the one year warranty period after Atlantic Richfield Company provides acceptance of the liner in accordance with the specifications.
- Jerry P. approved the temporary fencing and soil stockpile that barricades the open utility trench piping.
- Jerry P. also approved the temporary soil crossing that was placed over the Poly lines for access to the OU-1 landfill during the winter months. Four survey stakes will be placed to mark the crossing for identification after snow covers the ground.
- Seven (7) additional pipe caps are needed to be installed to replace no caps or just duct tape closures over open pipes. Two each are needed by Manhole "C" and at the north end of the PL near the water treatment building. Two more duct tape only closures were noted near the wetlands area and another was located closer to Manhole "H".
- The pile of fly ash by the haul road near Manhole G will have to be covered prior to demobilization.
- Final decontamination of equipment used to perform the above tasks.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS
(See notes from the 1:30 PM Site Walk.)

DESIGN CONCERNS AND RESOLUTIONS	
	Piezometer were installed at the following location, in conjunction with drawings C-11A: ➢ PZ-5: Station 16+00 (halfway between Manhole D and Manhole E) to a depth of 17 feet 9 inches.

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
1	Daily QC Report for November 8, 2007
2	Daily QC Report for November 9, 2007

Signature: Stephanie L. Andrews **Date:** 11/26/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

DAILY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Tuesday, November 13, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
LCW / SSS

VISITORS	
Name	***Company***

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
~~NONE~~		

DAILY ACTIVITIES
Well development
Repair garage door and install an overhead light on the red car barn.
Continue to conduct water balance test at the Sedimentation Pond (Day 6).
Continue to install wire fabric temporary fencing in predetermined areas for the course of the winter.

MEETINGS
H & S Meeting at 7:00 AM • Announce agenda for the day (see daily activities). • Discuss safety concerns and precautions. • Permits: Ground Disturbance. • Review JSAs.
H & S Meeting at 12:45 PM • No changes to construction activities. • Distribute fog pamphlet.

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	NONE

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTALS AND MISC. DOCUMENTS RECEIVED	
	NONE

Signature: Stephanie L. Andrews **Date:** 11/26/2007

Stephanie Andrews
SECOR Engineering, P.C.
QA Official

Appendix B – Weekly Quality Assurance (QA) Reports and Other Meeting Minutes

Former Sinclair Refinery, Wellsville, NY

Pre Construction Kickoff Meeting for the former Sinclair Refinery ("The Site"), Wellsville New York

Date: 7/26/07
Time: 10:00 am

Attendees:	**Company**
Ken Hannon	SECOR Engineering, P. C.
Jennifer Menges	SECOR Engineering, P. C.
Stuart Klaus	SECOR Engineering, P. C.
Srinivas Kappagantula	SECOR Engineering, P. C.
Stephanie Andrews	SECOR Engineering, P. C.
Penelope Padmore	SECOR Engineering, P. C.
Cameron O'Conner	New York State Department of Health
Maurice Moore	New York DEC
Joe Sontchi	Atlantic Richfield/BP
Bill Whitfield	Village of Wellsville Department of Public Works.

Topics discussed:

1. Construction schedule and work sequencing:
Construction schedule/work schedule is in the Site Management Plan.
Ken Hannon will re-distribute it if any new changes are made.
The planned schedule is as follows: During phase II -1: Create a 400' long pilot trench and sedimentation ponds, simultaneously on Otis property. On October 12, break for winter, returning in spring to build basins for pond. This phase of the project is scheduled to end in May.

2. Designation of responsible personnel
Resident engineers and quality control officials are scheduled for three week on/three week off. QA officials are Stephanie Andrews and Penelope Padmore. Resident Engineers are Stuart Klaus and Srinivas Kappagantula.

3. Quality control requirements
Terry LeMasters and Jerry Resnik, the QC manager and the Project manager respectively, provide documentation showing received materials meet specifications. They also ensure that materials ordered and work done are to the specifications.

4. Quality assurance procedures and protocols

5. Procedures for processing field decisions and change orders
If there is any need to make changes to, or clarifications of the design, Compass will bring any need for change to the attention of the Resident Engineer, who will bring it to Ken, the Project

Manager. All changes and clarifications are tracked on a spreadsheet, and notice is distributed to those on the distribution list.

6. Procedures for processing Applications for Payment.
Both companies direct bill to BP and are comfortable with the process for payment processing.

7. Submittal procedures and requirements
A submittal register is currently being built by Jerry Resnik. For anything that differs from approved specification, the coversheet will make a note of that, and the Resident Engineer will review.

8. Handling of record documents
Compass records remain on site. SECOR will also keep copies, so as to show a consistent record.

9. Use of the premises
The premises consists (west to east) of the area from the security trailer to the river. From north to south, it extends from an area in the industrial park to the perimeter fence in the south. The area currently being worked on is at the southern end of the Site, extending up to the locked gate at the northern end of the landfill. In 2-3 weeks, work will be going on in area past this gate. Trailers will be fenced for both security and safety.

10. Permits and approval process
In order to control worksite, there is an extensive daily permit process, for instance, authority to work, permits to work, and Job Safety Analyses. Special tasks such as working at heights (6 feet or more above the ground surface), confined space entry, etc. require their own separate permits.

12. Office, work and storage areas
Trailers are north of the area where work is currently going on, on the former Otis property. Within 2-3 weeks, work in the WAG trail area should commence.

13. Equipment delivery/ priorities
A staging area will be set up for materials being delivered. Any delivery must first contact security at the main gate, who will then call the responsible person to escort the delivery.

4. Safety, first aid and security
The safety training program for this site is 3-tiered. Those who are working for this site regularly are required to attend an 8-hour safety training. Temporary workers go through the safety partner program. They attend a ½ hour orientation, and must be accompanied by an escort at all times while on the Site. The third tier is for Site Visitors, who must also have trained site worker with them at all times.
An abbreviated form of the 8 hour training may be developed for utility workers who may have to come onto the Site, in case of a utility related issue.
All security guards are retired NY State Troopers.
Emergency procedures are in place, which include chain of notification, and other emergency procedures.

15. Working hours
Working hours are from 7:00 am to5:30 pm, Monday through Friday.

16. Property access
Will fence off part of WAG trail to keep pedestrians out.
Fence for site control, Mike requested a foot path in order to not have workers walking where the equipment was running.
Some utilities will need to be abandoned on the site.

OTHER:
Maurice will inform the NYS DEC offices in Olean and Belmont that this site is here, and will send a copy of EPA notice to work. He will also let the Regional Director in Buffalo know, and has already notified the Regional Engineer.
Maurice will be the point of contact for the DEC.
Any questions about the project should be directed to Joe Sontchi.

Meeting adjourned at 10:48.

Minutes approved by:

Name	Title	Company	Signature
PENELOPE PADMORE	QA official	SECOR Engineering, P. C.	
Stuart Klaus	Resident Engineer	SECOR Engineering, P. C.	
Joe Sontchi	Environmental Business Mgr	Atlantic Richfield	

DATE:

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

Minutes for Weekly Quality Control Meeting

Site: Former Sinclair Refinery, Wellsville, NY

Date: 7/26/07
Time started:13:30
Time adjourned: 14:40

Attendees:	**Company:**
Joe Sontchi	BP (Atlantic Richfield)
Ken Hannon	SECOR Engineering, P. C.
Jennifer Menges	SECOR Engineering, P. C.
Stuart Klaus	SECOR Engineering, P. C.
Srinivas Kappagantule	SECOR Engineering, P. C.
Stephanie Andrews	SECOR Engineering, P. C.
Penelope Padmore	SECOR Engineering, P. C.
Terry LeMasters	Compass Environmental
Jerry Resnik	Compass Environmental
Mike Vails	Compass Environmental
Adam Calvelage	Compass Environmental

Topics discussed:

1. **Development of weekly meeting agenda.** The weekly agenda will contain the following items:
   - Exceptions, deficiencies, QC or other issues;
   - Will note tests done, results;
   - Latest copy of submittal register;
   - SECOR Engineering, P.C. will call out submittals needed;
   - Recap of the week's activities;
   - Preview of what is planned in the week ahead, making special note of any changes in schedule, and of any new activities;
   - Work started;
   - Work completed;
   - Any major change in scope coming up;
   - Any tests which will be done in the next week;
   - Possible future issues;
   - HHSE.

2. Exceptions, deficiencies/ issues:

1. The following submittals need to be resubmitted with a cover sheet showing that exceptions from the specifications are requested:
   1. 02115 (Erosion and sediment control measures)
   Permits needed:
   - Erosion and sediment control permit

- Highway permits for equipment mobilization and demobilization
- General construction permits (i.e., electrical and plumbing)
- Off site waste disposal or transportation permits.
- Utility right-of-way access.
- Utility abandonment plan.

2. 01300 (Submittals)

a. **Submittal register**

- Jerry Resnik stated that this should be completed by Friday.

b. **Specific submittals**

On all of the following, the cover page of the submittal should state that the material does not meet the standard, and should state that the submittal contains a variance. These need to be resubmitted.

- Silt fence Spec. section 02115.

Material does not meet two of the criteria. The UV variance has been approved by Ken Hannon, the grab elongation is under review.

- HDPE, DR 11, Spec. section: 15500A:
  - No information on the 2" pipe was included with the specifications.
  - Pipe is from a different manufacturer than called out in the specifications.

- Joint sealant , Spec. section: 03400A
  - Different part number from that called for in the specification.

- Trench Geotextile, Spec. section: 02210A
  - Different part number from that called for in the plans and specification.

3. Health and safety reports and

4. Subcontractor's acceptance of Health and Safety Plan.

5. Spec. # 2055 Decontamination

- SECOR Engineering, P. C. does not have a copy of the decontamination plan.

6. Specification # 1050 Field Engineering

- No surveying of the site has been done to create control points. The drawing needed for surveying does not have the correct reference points. The Resident Engineer is working on this issue.
- No information, copies of NY state licenses, or required certifications of surveyor who is to do the work\ have been received.

3. Tests Completed:

None

4. Recap of the week's activities:

Work started:

- Silt fence installation, clearing grubbing, grading.

Work completed:

- Trees and fences torn down, clearing, grubbing, southern end of Site. Some debris dug up and stockpiled, will need to be moved.

5. Tests planned within the next week:

- Air monitoring program will begin.

6. Work planned:

- For the week of July 30 to August 3:
  - Begin building the sedimentation pond
  - Build a decon pad and staging area
  - Remove larger trees

August 7th, digging of the trench will start.
An 8 hour class is planned for August 6th.

7. Upcoming concerns:

1. The pond needs to be ready so that it can hold water pumped from the trench, prior to digging the trench.
2. We need documentation of the shoring method for building the trench.
   a. Shoring method planned will be using a sliding rail trench box.
3. We also need a confined space protocol.
4. Will be using well points for dewatering the trench.
5. Using the jar test on incoming gravel shipments may impact productivity.
   a. In order to make this less time consuming, a Compass Environmental employee will be at the gravel quarry testing truckloads, and documenting results before they leave for the Site. SECOR will intermittently test gravel on site and at the quarry for verification. Compass Environmental will maintain and submit to SECOR, a daily log of this test.

8. Submittals:

An acceptable template (meeting the requirements noted in the specifications) is needed for the submittal cover pages.

Jerry Resnik will have the submittal register ready Friday.

9. Site Access:

Bike path will be closed off.
The surveyor will mark the property line, so that temporary fence can be installed.
Currently, the part of the path which is unpaved is closed to the public.

10. HSSE: meetings will be held twice daily, at the beginning of the workday, and at 12:45. Every Friday, a weekly safety meeting will be held at lunch time.
So far, there have been 350 man-hours (Excluding SECOR and On-Site) without any incidents. Air monitoring equipment has been ordered. Testing will be up and down wind, as well as in the space where work is going on. Instruments include a 4-gas meter and FID.

11. Reporting man hours: Jerry Resnik reports this to Joe Sontchi on a monthly basis.

BP Atlantic Richfield
BP

Minutes approved by:

Name	Title	Company	Signature
Penelope Padmore	QA official	SECOR Engineering, P. C.	
Stuart Klaus	Resident Engineer	SECOR Engineering, P. C.	
Joe Sontchi	Environmental Business Manager	Atlantic Richfield	

DATE:

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

Weekly QC report **July 23 to July 27, 2007**
Former Sinclair Refinery, Wellsville, NY

Week of: July 23, 2007

Health and Safety Summary
A total of 370 man hours were worked this week with no Health and Safety incidents. Safety meetings were held at 7:00 a.m. each morning and 12:45 p.m. each afternoon, on each day of work on site. A safety lunch was held on Friday, in which safety observations were voted on.

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, Reed and Culbert, and James Ball, Land Surveyor.

Work completed:
Trailer skirting was installed
Telephone system was operational by Friday, 7/27.
Clearing , grubbing, and some grading of the southern end of the site
Installation of silt fence, from the southern edge of the Site to the locked gate at the northern end of the landfill.

Meetings:

The Construction kickoff meeting was attended on Thursday by representatives of state and local agencies, along with representatives from BP and Secor.

The first weekly QC meeting was held on Thursday, July 26. The first order of business was to develop an agenda for future meetings.

7/24/07
Construction Concerns
None noted

Design Clarifications
D1. Design clarification needed on three pipes go through flow meter structure, only one is shown going to the assembly above the flow form aerator splitter plan.

D2: Flow form aerator splitter on p. 16a of drawings shows one 6" HDPE line, Contractor noted that 3 lines, (2 live and a spare) should be included.

Submittal Concerns
S1. Silt fence cert (Product # 303600351) did not meet specification with regards to two tests: ASTM 1682, grab elongation and ASTM G-26, UV resistance.

Resolutions

D1. Stuart Klaus noted clarification on RE drawings.

D2: The Contractor called manufacturer to correct.

S1. Exception made for G-26 by Ken Hannon, the SECOR, International, Inc. Project Manager stated that if silt fence deteriorates, then the contractor will have to reinstall with no additional cost. Compass will provide specs on material so that the RE can make a determination as to whether and exception should be made for ASTM 1682.

7/25/07

Construction Concerns

None noted.

Design Clarifications

D1. Plan shows the detail for the prefabricated monitoring box assembly, but does not state the spacing between the pipes. The drawings from the manufacturer state an 18" spacing between them. SECOR, International Project Manager, Ken Hannon requested a 12" spacing on center.

Submittal Concerns

S1. 02115 (Erosion and sediment control measures)

Permits needed:

- Erosion and sediment control permit
- Highway permits for equipment mobilization and demobilization
- General construction permits (i.e., electrical and plumbing)
- Off site waste disposal or transportation permits.
- Utility right-of-way access.
- Utility abandonment plan.

S2. Spec #01300

a. Submittal register

b. Specific submittals:

On all of the following, the cover page of the submittal should state that the material does not meet the standard, and should state that the submittal contains a variance. These need to be resubmitted.

- Silt fence Spec. section 02115.

  Material does not meet two of the criteria. The UV variance has been approved by Ken Hannon, the grab elongation is under review.

- HDPE, DR 11, Spec. section: 15500A:
  - No information on the 2" pipe was included with the specifications.
  - Pipe is from a different manufacturer than called out in the specifications.

- Joint sealant , Spec. section: 03400A
  - Different part number from that called for in the specification.

- Trench Geotextile, Spec. section: 02210A
  - Different part number from that called for in the plans, and specification.

S3. Health and safety reports and subcontractor's acceptance of Health and Safety Plan.

S4. Spec. # 2055 Decontamination
- SECOR does not have a copy of the decontamination plan.

S5. Specification # 1050 Field Engineering
- No surveying of the site has been done to create control points
- No information or certs on surveyor who is to do the work.

Resolution

D1. Jerry Resnik contacted the manufacturer who has changed the spacing from 18" on center to 12".

S1. Jerry Resnik and Terry LeMasters are working on getting copies of required permits to SECOR.

S2a. Jerry Resnik is in the process of creating a submittal register.

S2b. Clarified with J. Resnik that where wording such as " ...or engineer approved equivalent" are used, Compass needs to get the approval from the SECOR Project Manager. Submittals which vary from the specifications need indicate that a variance is requested. He agreed to resubmit the items mentioned above. A new template for the cover sheet is being created.

S3. Compass Environmental's Health and Safety officer is currently working on this issue. EPA air monitoring requirements stated in the plan give values, but no units for acceptable limits.

S4. Jerry Resnik will send SECOR a copy of the decontamination plan.

S5. Jerry will get the necessary paperwork from the surveyor.

7/26/07

Construction Concerns
None noted

Design Clarifications
None noted

Submittal Concerns
None noted

Resolutions
All submittal concerns were raised during the weekly Quality Control meeting. Jerry Resnik said that he will resubmit the submittals which have been not accepted. He has built a submittal register, and will send the utility abandonment plan this evening.

7/27/07

Construction Concerns:
C1. Clearing and grubbing were halted at about 11 am when the bearing which holds the blade of the bulldozer was damaged.

C2. Monitoring wells in work area not flagged (marked).

C3. Concrete culvert observed, at southern end of Site. It is possibly a utility, such as a storm sewer. The cover on it is falling into the culvert because it does not fit, and is supported on rotting plywood. Adjacent to the culvert is a set of buried electrical cables, the ends of which had been cut at some time in the past, and wrapped in electrical tape.

Design Clarifications
D1 There are no reference points and the contours are incorrect in the plans given to the surveyor for a portion of the southern end of the site which has the wetlands in it.

Submittal Concerns
S1. Revisions are needed in the Utility Abandonment plan submitted by Compass because the plan submitted only covers unidentified utilities.

S2. Specifications # 1039:
QA does not have any copies of material delivery for materials which have been delivered and used, for instance, the silt fence, posts, snow fencing, or liner for the decon pad.

Resolutions
C1. Mike V. stated that the bulldozer should be repaired Monday morning, and that another bulldozer should be arriving at that time, also.

C2. Compass was reminded to flag (mark) monitoring wells in work area

C3. Culvert was documented and photographed. Mike V. said that for now, it is not in the way.

D1: CAD operator (from ROWE...) is sending the correct file to the RE who will forward it to the surveyor.

S1. R.E. Stuart Klaus made Compass aware that the plan needs revision.

S2: Asked for documentation on 7/26.

Date: 8/6/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Date: 8/6/07

Stuart Klaus,
Resident Engineer,
SECOR Engineering, P.C.

Minutes for Weekly Quality Control Meeting

Site: Former Sinclair Refinery, Wellsville, NY

Date: 8/02/07
Time started: 1:30
Time adjourned: 2:15

Attendees:	**Company**
Joe Sontchi	BP/Atlantic Richfield
Stuart Klaus	SECOR
Penelope Padmore	SECOR
Terry LeMasters	Compass
Jerry Resnik	Compass
Mike Vails	Compass
Adam Calvelage	Compass
Ken Hannon (via conference phone)	SECOR

1. Work performed

Cutting, hauling, and filling of the sedimentation pond and sludge dewatering beds.
Clearing and grubbing of the vertical flow and horizontal flow wetlands.
Surveying.
Various Administrative submittals and procurement

2. Work Projected

Clearing, grubbing, cutting, hauling and filling continuing.
Temporary fence installation
Begin decon pad construction
Begin Pilot Trench- Manhole H is due on site Friday, August 10.

3. Schedule
On Schedule

4. Scope Items
Unsuitable native soils for liner placement. 6" clay liner needed.
Expanded Cascade Aerator System – NAWE. Cascade aerator step design has changed. It now shows ten rows instead of 9.

5. Open Items
Sedimentation pond liner is under review.
Cascade aerator – Concrete form details are needed.
Cascade Aerator Step Design
Submittals from 1-20 have been received.

6. Safety

The Contractor (Compass Environmental) has worked 702.11 total hours. These include 632.5 hours for Compass, and 70 hours by subcontractors, without a Health and Safety incident. A dust monitoring program was instituted this week.

7. Visitors Anticipated

September 7, 9:00 a group including State Senator Kathy Young.

8. Exceptions, deficiencies/ issues:

Items missing:

1. Spec. # 02115 (Erosion and sediment control measures)
- Erosion and sediment control permit – status.
- Highway permits for equipment mobilization and demobilization
- General construction permits (i.e., electrical and plumbing)
- Off site waste disposal or transportation permits.
- Utility right-of-way access.
- Utility abandonment plan – under revision.

2. Spec. # 01400 QCAP needs the following items added:
- A copy of Mark Fleri's resume
- A copy of the maintenance program
- Maximum allowable levels for noise, dust, volatiles, and a plan for reducing these.
- Qualifications of labs doing which will be doing the testing.
- Field QC procedures, some of which are listed in 02115, p. 2.1.

3. Copies of ASTM's for all tests that SECOR QA is required to observe.
- Joint sealant , Spec. section: 03400A Joint sealant submittal was approved.

- Trench Geotextile, Spec. section: 02210A
- Different part number from that called for in the plans and specification.

4. Subcontractor's acceptance of Health and Safety Plan.

5. Spec. # 2055 Decontamination
- SECOR does not have a copy of the decontamination plan for Compass.
  - A copy will be provided by Compass.

6. Specification # 1050 Field Engineering

Resume and licenses received, need a cover sheet.

- We need sheets which show what instruments they are using and the accuracy.
- Utility abandonment plan. Utilities discovered which have been barricaded, wires and culvert. Need the city to come out, identify them, and state whether they are part of their system or not, in order to abandon them.

- Soil compaction: We need compaction results for the Site soils. No information yet on soil testing labs.

Resolutions:

QA has been receiving daily H and S reports from Compass.
New coversheets for submittals have been received.

7. Issues from last weekly QA meeting:
    1. The pond needs to be ready so that it can hold water pumped from the trench, prior to digging the trench.
    2. We need documentation of the shoring method for building the trench.
        a. Shoring method planned will be using a sliding rail trench box.
    3. We also need a confined space protocol.
    4. Will not be using well points for dewatering the trench, instead will attempt to control water inside the trench w/ pumps

Minutes approved by:

Name	Title	Company	Signature	Date
Penelope Lieder	QA official	SECOR Engineering, P.C.		8/15/07
Stuart B. Klaus	Resident Engineer	SECOR Engineering, P.C.		8/15/07
Joe Southi	EBM	Atlantic Richfield		8/15/07

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

Weekly QC report **July 30 to August 3, 2007**
Former Sinclair Refinery, Wellsville, NY

Week of: July 30 to August 3, 2007

Safety
As of August 3, 2007, there were a total of 776.5 manhours worked by the Contractor and subcontractors, with no health and safety incidents.

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, Reed and Culbert, and James Ball, Land Surveyor, Niagara-Mohawk.

Work completed:
Clearing, grubbing, and surveying of area for vertical wetlands. Clearing, grading of area for horizontal flow wetlands.

Meetings:
Health and Safety meetings were held each day at 7:00 a.m. and 12:45 p.m., except on Friday, when the afternoon meeting was replaced by a lunch meeting in which safety ideas/observations were presented and voted on.
The second weekly QA meeting was held on Thursday, August 2.

7/30/07
Construction Concerns
C1. The bulldozer mechanic arrived. He will need another part for the bulldozer, and will have to cut and re-weld the part onto the blade. A hot work permit will be prepared for this work tomorrow

C2. During a site walk with Joe Sontchi, he requested that the electrical wires which are visible near the culvert at the southern end of site be clearly marked, and access restricted, also at the electrician investigate whether this utility could potentially be energized.

Design Clarifications
D1. The stair dimensions for the flow form aerator are not specified on the plans. Also enforcement such as rebar is also not specified. Compass, which is building the aerator stairs, has requested this clarification.

D2. The surveyors were unable to open the recently sent file which shows the area of the sludge dewatering pad.

D3. Infiltration Sump Inlet piping – slotted corrugated piping – w/ geotextile wrap - is shown on the drawing is shown on the plans, but not in the specifications. The shop drawing, part of submittal #015, did not include this.

S1. Will let Compass know about the missing elements of the CQAP.

S2. The certification has been forwarded to the Resident Engineer (RE), Stuart Klaus for review.

S3. The manufacturer will correct.

S4. Jerry Resnick of Compass is currently revising their utility plan.

7/31/07

Construction Concerns

1. Dust from the dump truck reaches over two stories at times, and can be seen drifting over the landfill.

2. Observed saturated soil in the eastern corner of where the sludge pond is going to be installed. Even after soil was removed, a saturated area remained.

3. Maintenance workers who are responsible for mowing the grass on top of the landfill cut a section of the silt fence for access.

Design Clarifications

D1. Drawing C-16a detail changed. Instead of two corner irons supporting the grating, a T-bar will be used.

Submittal Concerns

None noted

Resolutions

C1. Mentioned the dust issue to Adam Calvelage, the Compass Health and Safety officer. He stated that Compass is looking into a water truck or some other method of dust control. Also mentioned this to Jennifer Menges, SECOR's Project Health and Safety Officer.

C2. Brought this to the attention of the Resident Engineer (RE) Stuart Klaus, who made note of it. Issue was resolved when the surveyors marked the actual location of the sludge dewatering pad. The area in question is outside of the boundaries of it.

C3. The silt fence will be repaired, and a section will be altered so that Onsite will be able to more easily access the gate.

D1. RE noted the change on the plan.

8/01/07

Construction Concerns

C1. RE expressed concern about the amount of large rocks in the fill material, cobble size and larger, because of the effect rocks such as that may have on the liner.

C2. Silt fence will be replaced tomorrow and altered so that Onsite will be able to access OU1.

C3. Soil lifts are being deposited and rolled/compressed without any Proctor test results to identify maximum density/moisture content relationships. Also, there is no method to add water to soil. Spec. 02210, p. 3.9 indicates that proctor tests should be completed before compaction is begun.

C4. Power pole near sedimentation pond may have live phone lines. Also, indications that underground lines run from this pole.

Design Clarifications
None noted

Submittal Concerns
S1. Spec. # 01400 QCAP needs the following items added:

a. A copy of Mark Fleri's resume
b. A copy of the maintenance program
c. Maximum allowable levels for noise, dust, volatiles, and a plan for reducing these.
d. Qualifications of labs doing which will be doing the testing.
e. Field QC procedures, some of which are listed in 02115, p. 2.1.
f. On p. 13, change "Imported materials" to "Granular fill for Infiltration trench". This test should not be needed for the utility trench fill.

S2. SECOR does not have any copies of ASTM's for any tests that SECOR QA is required to observe.

Resolutions

C1. Alternatives were discussed, for instance, using a landscaping rake to remove 2" diameter and above sized gravel/cobbles.

C3. Brought this to the attention of the RE. After inspecting the work, he pointed out that the amount of cobble sized rock in the soil made it robust enough, regardless of moisture content, to support structures, but that in order to meet the specifications, Proctor test results may be needed.

C4. Niagara-Mohawk will be on site next week in order to remove/shut off any live utilities in that area.

S1, and S2: Will be brought to the attention of Compass Environmental.

8/02/07
Construction Concerns

C1: The 700 bulldozer malfunctioned at about 9:00 am and was fixed. Stopped working again about 3:00 p.m.

Design Clarifications
None noted

Submittal Concerns
All outstanding submittal concerns, and the status of approved submittals were addressed at the weekly QC meeting.

S1 A submittal is needed on the 11' radius 6" diameter corrugated pipe, to be installed around man holes.

Resolutions
C1: The mechanic is expected tomorrow.

D4, and D5, (From 7/30/07) Geotextile for infiltration trench was ok'd for use by the RE, as were the 6" and 2" PVC pipes.

Date: 8/13/07
Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Date: 8/10/07
Stuart Klaus
Resident Engineer,
SECOR Engineering, P.C.

Minutes for Weekly Quality Control Meeting

Site: Former Sinclair Refinery, Wellsville, NY

Date: 8/09/07
Time started: 1:42
Time adjourned: 2:29

Attendees:	**Company**
Joe Sontchi	BP/ Atlantic Richfield
Stuart Klaus	SECOR
Penelope Padmore	SECOR
Terry LeMasters	Compass
Jerry Resnik	Compass
Mike Vails	Compass
Adam Calvelage	Compass
Ken Hannon	SECOR
Srinivas Kappagantula (by conference phone)	SECOR
Jon Brandes	On-Site

1. Safety

1. First Aid incident. On August 8, a worker stepped on a nail while removing debris from the demolished building. First aid was administered, care was based on recommendations from Health Source. All BP policies were followed, and required notifications made.

2. Results of air monitoring program. No exceedances recorded. Humidity and heat are concerns because they may affect the accuracy of the PID readings. No exceedances recorded with the FID.

3. Up to the time of the incident, Compass and its subcontractors had worked a total of 1052.5 hours without a safety incident. As of the time of the meeting, Compass had worked a total of 120 hours, and 10 hours for subcontractors without a safety incident.

2. Work performed

Cutting, hauling, and filling, compacting of the sedimentation pond and vertical flow wetlands.
Clearing and grubbing of the vertical flow and horizontal flow wetlands.
Surveying.
Various Administrative submittals and procurement.

3. Work Projected

Clearing, grubbing, cutting, hauling and filling, compacting continuing.
Dig sedimentation pond, rough in wetlands
Fence installation which will deliminate the area of the office trailers.
Begin decon pad construction.
Set manhole - Manhole H is due on site Friday, August 10.
Pilot Trench – expected to begin Monday.

Delivery of a total of 500 tons of stone expected to arrive on Friday, Monday, and Tuesday. In two weeks, it is expected that the liner installation will begin

4. Schedule
On Schedule.

5. Scope Items

6. Open Items

7. Safety
The Contractor (Compass Environmental) has worked 702.11 total hours. These include 632.5 hours for Compass, and 70 hours by subcontractors, without a Health and Safety incident. A dust monitoring program was instituted this week.

7. Visitors Anticipated
September 7, 9:00 a group including State Senator Kathy Young.

7. Previous week's issues

1. Exceptions, deficiencies/ issues:

Delivery of 6" pipes did not have any information about the specific lots having been tested by the manufacturer, and as of yet, are not approved.

Need certification that the people using the machine were trained according to the manufacturer's instructions.

Items missing:

1. Spec. # 02115 (Erosion and sediment control measures)

- Erosion and sediment control permit – status.
- Highway permits for equipment mobilization and demobilization- **received**
- General construction permits (i.e., electrical and plumbing)
- Off site waste disposal or transportation permits.
- Utility right-of-way access.
- Utility abandonment plan – under revision.

1. Spec. # 01400
QCAP – status…
needs the following items added:

a. A copy of Mark Fleri's resume
b. A copy of the maintenance program
c. Maximum allowable levels for noise, dust, volatiles, and a plan for reducing these.

d. Field QC procedures, some of which are listed in 02115, p. 2.1.

3. Copies of ASTM's for all tests that Secor QA is required to observe.- resolution suggested -
2. **01300 (Submittals)**
Pond Geotextile, smooth and textured: Ken approved.
On the geotextile:

4. Subcontractor's acceptance of Health and Safety Plan.

6. Specification # 1050 Field Engineering

We need sheets which show what instruments they are using, and the accuracy.

Utility abandonment plan - status

Received, not reviewed: certifications and qualifications of testing laboratories.

Submittal # 25 – Not accepted, Copper and Manganese levels are too high on one of the samples.

QA needs information on whatever materials/equipment are received.
S1: Submittal # 014, Utility Abandonment plan: RE requested that this be added to it:
"Procedures outlined in the SERP will be followed for spill notification and response. Detailed information is also available in the site HASP."

S2: Submittal # 24 Spec # 15061A:

- The panels are not from one of the named manufacturer. Needs engineer approval.
- The panels are not listed as meeting UL 508A or UL 698A standards.
- The pump and rail system meet the specs, but additional items are needed. They include:
  - Setting drawings w/templates
  - Directions for installing, including foundation and anchor bolts and other anchorages.
  - Wiring diagrams which include detailed wiring for power, signal and control systems, differentiating between manufacturer installed and field installed wiring.
  - Manufacturer's installation guide
  - Maintenance data
- Manhole flow meter is also needed

S3: Submittal #'s 009 and #012: RE requested that a notation on the cover sheet indicate that Compass is no longer asking for an exception to the chemical testing requirement.

S4: Cover sheets for submittals contain the comment: The specification requirement for installation instructions is N/A, which needs clarification.

1. Documentation of the shoring method for building the trench is required.
    a. Shoring method planned will be using a sliding rail trench box.
2. A confined space protocol is also needed.

Minutes approved by:

Name	Title	Company	Signature	Date
	QA official	SECOR Engineering, P.C.		8/17/07
	Resident Engineer	SECOR Engineering, P.C.		8/29/07
	EBM	Atlantic Richfield		8/27/07

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

Weekly QA report **August 6 to August 10, 2007**
Former Sinclair Refinery, Wellsville, NY

Week of: August 6 to August 10, 2007

Safety
As of August 3, 2007, there were a total of 776.5 man hours worked by the Contractor and subcontractors, with no health and safety incidents.
Up to 8/8/07, Compass had worked a total of without a safety incident. At that time, one of the employees had a nail go though the sole of his boot and cause a wound on his foot. First aid was administered, and all the appropriate notifications were made.

Companies Present
SECOR Engineering, P.C., On-Site, Compass Environmental, CTW, Reed and Culbert, and James Ball, Land Surveyor, Niagara-Mohawk.

Activities summary:
Surveying
Cutting and filling
Depositing lifts and compaction of vertical flow wetlands berms
Fusing pipe
Receiving and testing aggregate fill

Meetings:
Health and Safety meetings were held each day at 7:00 a.m. and 12:45 p.m., except on Friday, when the afternoon meeting was replaced by a lunch meeting in which safety ideas/observations were presented and voted on.
The third weekly QA meeting was held on Thursday, August 9.

Construction Concerns
C1. Soil stock pile is partially on top of easement, under power lines, and needs to be moved. Resolution: soil was moved.

C2. Saturated soil at the bottom of the sedimentation pond is visible in tire tracks of dump trucks. About 4 to 4.5 more feet of soil needs to be evacuated from the bottom of the pond – RE is monitoring.

C3. Pockets of impacted soil are now visible and can be detected by their odor where the sedimentation pond is being excavated Compass is now monitoring the work area with an FID. Soil contamination was also mentioned in the H and S meetings.

Delivery of 6" pipes did not have any information about the specific lots having been tested by the manufacturer, and as of yet, are not approved. Terry is working on getting the information from the company.

Design Clarifications

D1: Specification 2210 calling for geotextile beneath the utility trench is deleted.

D2: New drawings from NAWE show the cascade aerator stair structure with an added toe wall, as well as a 10th row of basins.

8/7/09

Construction Concerns

C2. Rainfall in the afternoon saturated the soil on the vertical wetlands berms. Soil was reworked with the bulldozer to facilitate drying the next day because the soil was too wet in the morning to compact. Some of the saturated material was removed from the berms surrounding the vertical flow beds, and the soil was given additional time to dry. Excavated soil from the sedimentation pond, to be used for building up of berms for the vertical flow wetlands was stockpiled near the area, and allowed to dry. Soils were then spread with the dozers and worked on near the berms while drying, until the soils were dry enough to compact properly.

Submittal Concerns

S1: Submittal # 014, Utility Abandonment plan: RE requested that this be added to it:

"Procedures outlined in the SERP will be followed for spill notification and response. Detailed information is also available in the site HASP."

S2: Submittal # 24 Spec # 15061A:

- The panels are not from one of the named manufacturer. Needs engineer approval.
- The panels are not listed as meeting UL 508A or UL 698A standards.
- The pump and rail system meet the specs, but additional items are needed. They include:
    - Setting drawings w/templates
    - Directions for installing, including foundation and anchor bolts and other anchorages.
    - Wiring diagrams which include detailed wiring for power, signal and control systems, differentiating between manufacturer installed and field installed wiring.
    - Manufacturer's installation guide
    - Maintenance data
- Manhole flow meter is also needed

S3: Submittal #'s 009 and 012: RE requested that a notation on the cover sheet indicate that Compass is no longer asking for an exception to the chemical testing requirement.

S4: Cover sheets for submittals contain the comment: The specification requirement for installation instructions is N/A, which needs clarification.

The cover sheets for the latest submittals also say that each one is a resubmittal of 013.

8/8/07

Construction Concerns
C1. A Compass employee was helping to remove debris from the demolished building. A nail punctured the sole of his boot, piercing his foot. First aid was given, and the appropriate notifications were done.

C2. Clear water in the bottom of the sedimentation pond is possible groundwater infiltration. If water remains during clay placement and/or liner placement, removal will be required.

Submittal # 019 Liner is approved.

Design Clarifications
The flow form aerator design should have 9 steps, and a toe wall. The correct version of the design drawing was sent out as newly revised C-16B.
Drawing #C12-A, the guide rails have a center support, which is not specified in the drawing.

Submittal Concerns
S1: Submittal 025. The aggregate backfill contains higher than allowable levels of manganese and copper. All other quantities for all three samples are within specification. SECOR does not have any qualifications for this laboratory, however. The recovery on their spiked samples for organic components ranges from 40% to 163%. RE, Ken Hannon and Joe Sontchi reviewed this submittal. Since the background levels in the soils in this area are much higher than those of the gravel, an exception was made. The requirement for jar testing of all shipments of aggregate is not waived.

Received, so far, with no submittals:
Resumes and NY license of James Ball Surveying.
Testing results, lot
Special hauling license, State of New York.

Construction Concerns
C1. Safety- Stop work authority was used when SECOR employees noticed that pipe wielding was going on at the foot of an unstable pile of pipes, with heat sources in an area of high weeds, and also workers were attempting to carry more than 100 lbs. The situation was stabilized by moving the pipe, and re-piling it so that it was stable, clearing the area, and getting enough people on the task so that no one had to lift more than 50 lbs.

C2: While fusing pipe, the generator failed a few times, once when two pipes were being pressed together. On the second connection, the clamps which hold the pipe while the machine presses the two pipe ends together was not tightened sufficiently, and slid across the seam. This seam later failed, was sawed, prepared and fused again.

More rolling/compacting of lifts need to be done. RE observed a depth of about 24" that had not yet been compacted.

8/10/07

Construction concerns

The lowermost ring of Manhole H was damaged during shipping. A large chunk, weighing about 15 pounds broke off. Joe Sontchi and Stuart Klaus (RE) approved of field repair by Compass. Compass repaired manhole with rebar and concrete.

Design Clarifications

The location of the sludge dewatering pump structure and the sludge dewatering drainage were adjusted in order to place inside fence boundaries. The pump is at a slightly lower elevation.

With both a 4" floor drain from the sludge pump vault structure to the sludge dewatering bed drainage lift station, and a 6" line from the sludge drying beds, a check valve is needed in the floor drain 4" running from the sludge dewatering pump vault structure to the sludge dewatering bed drainage lift station to prevent flooding (by backflow up the 4" floor drain line) of the sludge dewatering pump vault structure in the event of a power loss or pump failure in the sludge dewatering bed lift station.

Date: 9/10/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Date: 9/5/07

Stuart Klaus
Resident Engineer,
SECOR Engineering, P.C.

Minutes for Weekly Quality Control Meeting

Site: Former Sinclair Refinery, Wellsville, NY

Date: 8/17/07
Time started: 09:00
Time adjourned: 09:45

Attendees (by conference call)	**Company**
Joe Sontchi	BP/ Atlantic Richfield
Penelope Padmore	SECOR
Terry LeMasters	Compass
Jerry Resnik	Compass
Mike Vails	Compass
Adam Calvelage	Compass
Ken Hannon	SECOR
Jon Brandes	On-Site
Stephanie Andrews	SECOR
Todd King	Compass

Note: The weekly QA meeting originally scheduled for August 16 was cancelled to allow Compass to continue working on the field installation of Manhole-H (MH-H). This meeting was scheduled to replace the previously cancelled QA meeting and to focus discussions on developing options to successfully install the manhole (MH-H) in the Pilot Trench.

1. Safety
Compass has worked a total of 1772.5 man hours, with 840 man hours without a safety incident.

2. Work performed

Sedimentation pond is excavated to grade

Hauled and placed suitable liner bedding material in sedimentation pond

Continued wetlands earthwork

Finished establishing soil staging area

Began Pilot Trench

Transported soils from the Manhole H and Pilot Trench to the soils staging area

Welded HDPE Pipe

Various Administrative

3. Work Projected
Continue Pilot Trench excavation and partial backfill

Hauling soils from the Pilot Trench to the soils staging area

Clearing and grubbing the rest of the wetlands area

Welding HDPE Pipe

Compaction testing

Various Administrative

4. Schedule
Approximately 3 days behind schedule

5. Scope Items
None

6. Open Items
Trench excavation, manhole installation and water management:

While attempting to install MH-H on Thursday, the quantity of water entering the excavation exceeded the capacity of the pumps and storage tanks. The operation was postponed until an alternative construction approach is developed and approved. Installation techniques discussed include:

1. Packing clay around trench box during excavation. Discussion details include:
    a. Finding a suitable source of clay;
    b. Lead time on the analytical data;
    c. The effort required to excavate a larger area in order to have room for the clay around the excavation;
    d. Groundwater infiltration rate at the bottom of the excavation versus the sides of the excavation. Significant recharge (above pumping/storage capacity) could occur at the bottom of the excavation if a less permeable soil lens is not encountered.
2. Increase pumping and storage capacity for groundwater removal. A second 6" diameter pump and the use of 50,000 gallon storage tank or additional frac tanks may provide sufficient storage/removal capacity to complete the installation of the pilot manhole. Discussion details include:
    a. This would generate a large volume of contaminated water which would have to be stored/treated;
    b. When the pumping and groundwater infiltration rates were equalized on 8/16, of the groundwater infiltration rate was approximately 1,000 gallons per minute (gpm). The

equalization rates were achieved at an approximate depth of 16 feet. The excavation willgo to a depth of 20 feet; infiltration rates at that depth have not been determined but could exceed additional pumping and storage capacity.

3. Install the manholes "wet". Discussion details include:

a. Installing the manhole at the proper depth;

b. The current HDPE pipe ring around the manhole will be difficult to complete in a wet install. Properly securing the pipe and installing at a level, appropriate depth while under water is difficult. A design revision, including straight sections of perforated HDPE pipe attached to the manhole is being considered;

c. Mike Vails indicated that some dewatering was still necessary, in order to see the top of the manhole base as it is being installed,. The water level in the trench would have to be drawn down from an approximate depth of 10-feet (below grade) to approximately 16-feet

d. The procedure to install the manhole using this method would be to first verify the bottom depth, drop the base, and then fill the area around it with gravel up to grade.

4. An 8' trench box or similar structure which could be assembled above ground might help to keep water from flowing into the excavation. This approach could save time, since it would be assembled above ground and then lowered, versus using the excavator to assemble the trench boxes in the excavation.

The methods will be reviewed by Compass, BP/Atlantic Richfield and SECOR. Once suitable method(s) are agreed upon, BP/Atlantic Richfield will notify EPA.

Project Manager Ken Hannon noted that the invert elevation on the manholes and the pipes are critical design elements that must be maintained during the installation of the manhole system.

Electrical overhead wires in area of trench excavation

The poles with overhead wires which cross the pilot trench may possibly be moved. National Grid may move one of the poles, but it is possible that flexibility in the location of the trench may be required.

7. Safety
No issues.

7. Visitors Anticipated
A structural engineer working on the Phase II-2 Design Report is expected on Tuesday of next week.

8. Exceptions, deficiencies/ issues: There have been a number of submittals received in the last week. These submittals are being reviewed.

Minutes approved by:

Name	Title	Company	Signature	Date
Penelope Padmore	QA official	SECOR Engineering, P.C.		9/10/07
Srinivas Kappagantula (Resident Engineer)	~~Project~~ ~~Manager~~	SECOR Engineering, P.C.		08/27/07
Joe Santelli	~~PM~~	Atlantic Richfield		8/27/07

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

The fourth weekly QA meeting/conference call was held on Friday, August 17 at 09:00 a.m. Aside from a review of the week's activities, the main focus of the meeting was to discuss options for water management during the installation of manhole H.

Construction:

While beginning trench and manhole installation, impacted soil was encountered. Readings with PID and FID were below detectable limits, although there was a nuisance smell. The operation was changed slightly, and the excavated fill was deposited in area which was surrounded by silt fence, and lined with geomembrane.

Jar test procedure has been changed. Compass will alert SECOR that a load of material has arrived, and prior to unloading any materials, SECOR will witness jar tests.

On 8/16/07, All three frac tanks were full in about 90 minutes of pumping, and the trench for installing manhole H was not dewatered. Several options are currently being discussed for installation of the manholes and water management.

Material for liner subgrade being deposited in sediment pond has some rocks in it. Will inspect prior to liner installation to verify that it meets the specification. Specification states that no rocks with greater then 1" diameter can be in contact with the liner

Design Clarifications:

D1: When the manhole is installed, it is imperative that the inlet be at the elevation of 1452'.

D1: Project Manager Ken Hannon asked Atlantic Richfield BP to review the requirements for limits in soils, found in 02210, p 3-4 to another standard: Title 6, Part 375, Subpart 6, Section 8, (b), state of New York State, because the parameters in the specifications are intended for sediment, not soil. EPA and BP/Atlantic Richfield approved the change.

Stuart Klaus brought up the following issues in an email dated 8/15:
1. The 4" Inlet to 8" Piping could present a potential bottleneck.
2. The Aerator has PVC piping (4") - which will need to be transitioned to the 8" HDPE. Ideal transition (from a hydraulic standpoint) would be a smooth uniform relatively long cone gradually tapering from the 8" to the 4"
3. The drawing also provides no detail on securing the Flow Forms – assuming gravity was sufficient – given the size & weight of the structures.

Submittals:

Clarification needed on submittal # 026: Precast outlet structure

- ☐ The drawings specify O rings ASTM C-443. O- rings are not checked on the list on Weiser's cut sheet.

- ☐ Weiser shows a double wall with a 5" total thickness
- ☐ The drawing needs to specify that the L bracket has a thickness of 3/16".
- ☐ Need more clarification on the 16M boots

Clarification needed on submittal # 021: Hydraulic control splitter

- ☐ L bracket needs to be 3/16" inch thick
- ☐ Three chambers should be 36", they are 36 3/8, 35 ¾ and 36 1/8.
- ☐ The centers of the pipes should be 18 inches from the wall, not 16," in order for them to be exactly in the center of the chambers, as shown in the drawings by NAWE.
- ☐ The weir openings have stainless steel weir plates.
- ☐ The two drawings which show the opening for the 10" pipe which comes from the sedimentation pond show a 10" opening. Since the pipe is 10" (Interior diameter?) would this would make the opening too small? Also, there needs to be room for a link seal or engineer approved equivalent.
- ☐ Weiser needs to know what kind of pipe material to cast into walls for the 4" pipe openings.

Submittals Received

026 Atlantic Testing Laboratory Accreditation Certificates
027 ATL Statement of qualifications.
029: Corrugated polyethelene pipe
030: HDPE pipe quality cert
031 Cascade Aerator
(received with no submittal #'s):

1. Information on STL (laboratory)
2. Chemical data on clay liner

2. Chemical data for the clay liner is incomplete for the following reasons:

- o This is not the laboratory we have certification and qualifications for. The data is from STL in Buffalo. The qualifications are for Atlantic Testing Laboratory. We have incomplete qualifications for STL.
- o There is no chain of custody
- o There is no QA documentation.
- o Joe Sontchi wanted to see results for all of the analytes listed in the standard, so the data sheet was returned to Compass for them to notify the laboratory that additional data are needed.

A draft of the Master List was distributed this week. This is a spreadsheet which shows the status of all required test, certifications, and submittals. A second draft was given to RE on Friday, 8/17 for review.

Khaled Al-Akhras would like copies of all QA and QC daily and weekly reports for the dates he was on site.

Stephanie Andrews will be taking over as QA official on Monday, August 20th.

Date: 9/10/07

Penelope Padmore
QA Official,
SECOR Engineering, P.C.

Date: 08/23/2007

Srinivas Kappagantula
Resident Engineer,
SECOR Engineering, P.C.

MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Tuesday, August 21, 2007
8:00 a.m. – 8:50 a.m.

SECOR

ATTENDEES		
SECOR Engineering, P.C.	*Compass Environmental, Inc.*	*Atlantic Richfield*
Ken Hannon	Jerry Resnik	Joe Sontchi (via phone)
Srinivas Kappagantula	Terry LeMasters	
Stephanie Andrews	Mike Vails	
	Todd King (via phone)	

1. CONCERNS

- During the first attempt to dewatering manhole "H" on 08/16/2007, the groundwater intrusion rate exceeded the pumping capacity of approximately 1,000 gpm.
- Could not excavate the final four feet of subgrade in the excavation due to rate of intrusion.
- Some of the problems associated with installation of manhole "H" under four feet of water include:
    - Unknown conditions of the subgrade;
    - How the hooks will be released once the manhole is in place;
    - The attachment of the influent pipes to the manhole; and
    - The second section that needs to be put on correctly (11-foot diameter ring of corrugated HDPE around the manhole).

2. RESOLUTIONS

- A 15-foot long, 10-foot diameter pipe was proposed to be used in the excavation which will prevent the infiltration of groundwater.
- The pipe will be driven into the ground, the center dewatered and the manhole put into place.
- There are some potential problems associated with this method:
    - Can the pipe be driven into the subgrade?
    - Will the infiltration of groundwater coming through the bottom be as big an issue as infiltration in an open excavation?
    - What is the recharge rate going to be?
- If the pipe is implemented, the 11-foot corrugated HDPE ring cannot be used.
- The proposed alternatives to the ring of corrugated HDPE are straight line piping or flexible piping, both slotted with smooth interior walls (for ease of cleaning).
    - If smooth interior walls are not possible, corrugated walls may be substituted.
    - Straight line pipes may be a challenge during installation. Someone would have to get into the hole to put the piping in place.
    - Flexible pipes can be attached in advance to the manhole and then dropped into place all at one time.

- At an invert elevation of 1482 feet, the piping would extend vertically 20-30 feet from the manhole then slope up to grade so that it can be used as a clean out. Refer to the Figure 1 below.

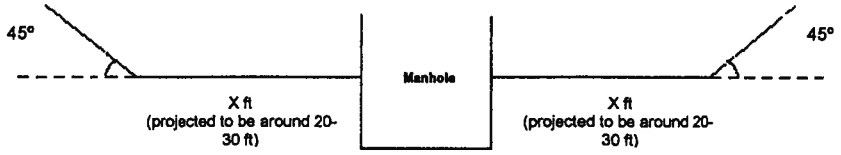


Figure 1: Alternative design for manhole construction

- A bladder or valve will need to be installed to close out the inverts. If corrugated piping is selected, a plug will be used.
- If a corrugated pipe is used at a 45° angle, iron fouling can be cleaned out by pouring acid into the pipes. Another means of cleaning the pipe is to back flush the pipe with water into the manhole and then cleaning the manhole out.
- For future manhole installations, the height of the manhole base may be increased to avoid excessive dewatering, providing an easy installation.

3. Subsequent Manhole Installations

- Compass will review proposed installation methods and discuss with BP and SECOR.

4. Schedule

- Install manhole "H", trench, and install the next manhole.

5. Outlook

- Groundwater pumped to frac tanks for temporary storage is anticipated to be treated by 08/24/2007.
- Reduce quantity of groundwater to be handled.
- Find way to install manhole "H"
- Arrive to an innovative way to install the remaining manholes so it is cost effective.

Joe Sontchi
Atlantic Richfield
EBM

8/28/07
Date

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

08/28/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

08/28/2007
Date

DATE:

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

MEETING MINUTES
Former Sinclair Refinery
Wellsville, New York
Thursday, August 23, 2007
1:30 p.m. – 1:45 p.m.

SECOR

ATTENDEES		
SECOR Engineering, P.C.	*Compass Environmental, Inc.*	*Atlantic Richfield*
Ken Hannon	Jerry Resnik	Joe Sontchi (via phone)
Srinivas Kappagantula	Terry LeMasters	*CDM*
Stephanie Andrews	Mike Vails	Khaled Al-Akhras

1. Safety
- No safety issues

2. Work Performed
- Cut, haul, fill and compact
- Construct decon pad
- Set manhole "H"
- Begin Pilot Trench
- Weld pipe
- Various Administrative Items

3. Work Projected
- Cut, haul, fill and compact Wetlands
- Continue Pilot Trench and begin full scale trench (main focus for the upcoming week)
- Continue to weld pipe
- Other:
    - The installation of the liner in the Sedimentation Pond that was originally scheduled for next week has been postponed.

4. Schedule
- 8 + days behind schedule

5. Scope Items

6. Open Items

7. Visitors Anticipated
- None

8. Administrative Issues:
- Overdue submittals:
    - *02115A:*
        - Samples and physical property information for the Geotextile for silt fence, roadways, entrances and swales.

- Proof that permits have been secured
    - General construction permits (i.e. – plumbing and electrical)
    - Erosion and sediment control permit
- Utility right-of-way access
- Material submittals for stone and rip rap (other than decon pad stones – Submittal 012):
    - Borrow source
    - Gradation
    - Analytical testing for all types of stone

- *02209A:*
    - Written procedure describing the methods proposed for excavating and handling soil including movement of excavated materials to the on-site materials handling.
    - Shop drawings: shoring methods
    - Products and equipment proposed for soil handling
- *02210A:*
    - Analytical laboratory testing for each imported soil fill material (all but aggregate fill – Submittal 025 and pipe bedding – Submittal 011)
    - Gradation Test Results
    - Plasticity Index Test Results
    - Classification Test Results
    - Standard Proctor Test Results
- *02661:*
    - Warranty from liner manufacturer and fabricator prior to shipment (sample given in Submittal 034 only)
    - Reports of tests defined in 2.1D
    - Resin:
        - Statement of production dates or dates
        - Certification that resin meets specs
        - Certification that all resin is from the same manufacturer
        - Copy of quality control certificates issued by the manufacturer
    - Thread - Min. break strength: 50 psi (need documentation)
    - Weight of processing aids, antioxidants and other additives other than carbon black
    - Percent by weight recycled polymer

- <u>Submittal Concerns / Issues:</u>
    - *Submittal 021: Hydraulic Control Splitter Structure:*
        - Width of inner cells of Plan View (36 3/8", 35 3/4" and 36 1/8") are different from our plans (3-36")

        - "L" stud should read a thickness of 3/16"
    - *Submittal 022: Piezometer Materials and Plan:*
        - The plan provided by NEW&C, Inc. indicated that they plan on using filter packs; however, our specs state that filter packs are not to be used.
        - Documentation of product info on screens and other accessories as shown on the shop drawing.
    - *Submittal 024: Manhole – Pumps, Guide Rails, Level Switches, Panel:*
        - The pump and rail system meet the specs, but additional items are needed. They include:
            - Setting drawings w/templates
            - Directions for installing, including foundation and anchor bolts and other anchorages.
            - Wiring diagrams which include detailed wiring for power, signal and control systems, differentiating between manufacturer installed and field installed wiring.
            - Manufacturer's installation guide
            - Maintenance data
    - *Submittal 032: Construction Quality Assurance Plan – Revised:*
        - Stop work authority is incorrect.
        - On page 13, on Table 5.1, the standard for the imported materials should read ≤ 1/8" Fines, not ¼" Fines (see spec section 02670-5).
- Yet to review:
    - *Submittal 035: Decontamination Plan*

9. Other

- The training class scheduled for Monday, August 27, 2007 has been cancelled.
- 30,000 gallons of groundwater were pumped today to the Water Treatment Plant.

Joe Sontchi
Atlantic Richfield
EBM

8/27/07
Date

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

08/27/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

08/27/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, August 20, 2007 – Friday, August 24, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS
James Ball, Land Surveyor

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Steve Wentan	Godwin Pumps
Chris Gill	R & L Carriers
Dave Header	Hertz Rental Company
Chris Murray	Argentieri Cleaners
Bill Reese	Hawbaken
Jeff Pixley	Howgen Transport
Scott Lyday	Stone Mt Masonry
Paul Stratman	Advanced GeoServices
Brandon Smith	UPS
Herman Werlitz	Industrial Services
Phil Egge	Milton (Cat)
Gary Morgan	Estes
Gary Thompson	National Fuel
Wally Clarke	National Fuel
Doug Norton	National Fuel
Josh Mudrick	Larry's Latrines
Roy Muntz	Godwin Pumps
Craig Martin	Shorts

EQUIPMENT / MATERIALS		
Item	*Shipped*	*Received*
Godwin CD100 MV 4" Wellpoint Pump, 6" FQD Suction, 4" MQD Discharge		X
Godwin HL80M/4045D/RGT 3" x 3" Dri-Prime, 3" FQD Suction, 2" MQD Discharge		X
3" x 20' HD Suction Hose w/Godwin Q.D.	X	
3" Suction Screen w/Godwin Q.D.	X	
6" Suction Screen w/Godwin Q.D.	X	
2" x 50' HD Discharge Hose w/Godwin Q.D.	X	
4" x 50' HD Discharge Hose w/Godwin Q.D.	X	
6" Female x 6" Male x 6" Male Godwin QD Tee	X	
6" 90 Degree Godwin Q.D. Bend	X	
4" Female Godwin Q.D. x 6" Male Evertite	X	
2" Godwin Q.D. End Cap	X	
2" Godwin Q.D. Jet Bend	X	
6" x 10' Godwin Q.D. Header Pipe	X	
6" x 20' Godwin Q.D. Header Pipe	X	
Wellpoint Swing Arm Assemblies	X	
18'-22' Wellpoint w/screen, Point and Riser	X	
Steel Cable		X
Concrete blocks for perimeter fencing (2 truck loads)		X

Stone for decon pad – 30.49 tons		X
10' diameter steel pipe for Trench / Manhole Excavation		X
Godwin Pumps		X
Baker Tank – CFUP2116L		X
Baker Tank – CFUP2116L	X	

ACTIVITIES DURING THE WEEK
Cut and fill, and placed suitable base material – Sedimentation Pond
Completed digging anchor trench for liner – Sedimentation Pond
Clearing (torn down fencing, metal posts, other misc. debris) – Sedimentation Pond
Completed final round of surveying and staking – Sedimentation Pond
Rocks were removed from the Sedimentation Pond in order to prepare it for the liner work
Fusion of HDPE piping to North Plant and South end of Site
Perimeter fence installed around trailers and parking area
Placed concrete blocks for perimeter fencing around the parking area
Excavated decon pad and installed liner
Filled decon pad with stone
Stockpiled clay for use in Vertical Wetlands
Cut, fill and compaction – Vertical Wetlands
Surveying and staking – Surface Flow Wetlands
Cut, fill and compaction – Surface Flow Wetlands
Grouted 4" corrugated HDPE to manhole "H"
Installed a 10-foot diameter 15' long steel pipe to minimize quantity of water to be handled during installation of Manhole "H". Approximately 30,000 gallons of water pumped to temporary frac tanks at the WWTP
Successfully installed manhole "H" using the steel pipe
Backfilled gravel around manhole "H"
Removed shoring equipment around manhole "H"
Begin the Pilot Trench

MEETINGS
H & S Meeting at 7:00 AM ***Monday thru Friday*** • Announce agenda for the day. • Discuss safety concerns and precautions. • Review JSAs.
H & S Meeting at 12:45 PM ***Monday thru Thursday****; H & S Luncheon at 12:00 PM* ***Friday*** • Jennifer Menges suggested that Compass invest in a fuel cap for all equipment to deter vandalism. (Monday) • Joe Sontchi noticed that one of the buildings was left open. Keep in mind that all buildings are to be closed and locked at the end of each work day. (Monday) • Bees are becoming an issue. (Wednesday)
Meeting via conference call at 8:00 AM, ***Tuesday, August 21, 2007*** • Issues discussed included options to install manhole "H" at required grade minimizing the quantity of water to be handled • Options were evaluated with respect to time and cost constraints • Attendees: SECOR – Ken Hannon, Srinivas Kappagantula, Stephanie Andrews; Compass – Jerry Resnik, Terry LeMasters, Mike Vails, Todd King; BP/Atlantic Richfield – Joe Sontchi • ***For more details see Meeting Minutes***
Weekly Progress Meeting at 1:30 PM, ***Thursday, August 23, 2007*** • Work performed • Work projected for next week • Schedule – roughly 8 days behind • The Sedimentation Pond liner will not be installed next week due to the saturated soil and scheduling issues. Liner crew scheduled for the week of September 17th. • No training on Monday. • 30,000 gallons of groundwater pumped to the Water Treatment Plant during installation of manhole "H". • 10-foot diameter pipe is a success and is reusable.

- Attendees: SECOR – Ken Hannon, Srinivas Kappagantula, Stephanie Andrews; Compass – Jerry Resnik, Terry LeMasters, Mike Vails; BP/Atlantic Richfield – Joe Sontchi; CDM – Khaled Al-Akhras
- ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	Inclement weather during the week. Thunder storms and heavy rains.
1R	*Work on-site was rescheduled accordingly.*
2	With respect to installation of Manhole H, the use of 10-foot diameter steel pipe was proposed, which would minimize the infiltration from the sides in the excavation.
2R	*Scott from On-Site was able to procure a 10-foot diameter 15' long steel pipe from a local manufacturer..*
3	During compaction at the Surface Flow Wetlands, pumping was observed in a few places.
3R	*This was most likely due to excess water in the soil. Areas will be filled and compacted again.*
4	Observed 1.5' lifts in Surface Flow Wetland.
4R	*Lifts should be 8". Issue was addressed by removing 10" of fill.*
5	Jim Ball completed the final survey of the Sedimentation Pond and staked the areas that need to be worked on to match the grades with respect to the design.
5R	*These areas could not be worked on to match the grades due to heavy rains during the week. Compass will address the issue once the water from the pond is pumped and the soils are dry.*
6	During the first attempt to install the manhole, the elevation of installation was off.
6R	*The manhole was removed and soil was excavated from inside the steel pipe to match the elevation of installation of the manhole.*
7	The manhole appeared to be at an angle after the installation.
7R	*The excavator was used to adjust the unit; however it could not be completely straightened. Uneven settlement of the material beneath the manhole is suspected to be the cause for the manhole to appear at an angle. Pipe inverts will be verified to ensure setting has no negative impacts on manhole performance.*
8	Removing the shoring equipment (ICON box) from the excavation after the installation of the manhole was a very cumbersome job. The ICON box could not be pulled out using regular pulling techniques with the excavators.
8R	*Soil around the shoring equipment was excavated. The corners where rattled so as to make them free and then lift the solid metal sides of the box with cables. Two excavators were placed opposite each other and concurrently exerted vertical force on two corners eventually lifting the setup.*
9	According to Jerry Resnik, the Sedimentation Pond liner work has been scheduled at the earliest the week of September 17th
10	During the excavation of the pilot trench towards North of the Manhole H, the sides of the excavation continued to cave in, making it very difficult to keep digging
10R	*The work was temporarily stopped due to non availability of right speaders of trench boxes on-site to be used with the 48" bucket of the excavator. A temporary steel fence was put up around the trench and work ceased.*
11	The trench boxes on-site had 37" (ID) spreaders while the bucket of the excavator being used for digging the trench was 48" wide, making the trench box unsuitable for the purpose.
11R	*Longer spreaders (approximately 54") were ordered to re-assemble the trench boxes so that digging with trench boxes in place could be started.*

DESIGN CONCERNS AND RESOLUTIONS	
1	Clarification issue in regards to what type of material is supposed to be placed on top of the gravel in the infiltration trench.
1R	*Gravel will be placed around manhole "H" to match the elevation of gravel in the trench.*
2	Compass reviewed new drawing C-16b and believes the rebar may not suffice for the amount of concrete that needs to be poured.
2R	*Compass is to submit a revised estimate and discuss with Ken Hannon and Joe Sontchi for approval.*

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	*Submittal 032: Revised CQAP* Issues: • Stop work authority is incorrect. Everyone on site has the right to stop work. • Table 5.1 on Page 13, the Standard for the Liner should read < 1/8" fines, not ¼" (See spec section 2670, Page 5)

1R	*RE reviewed the document and is aware of the problems. This will be directed to Jerry so he can make the appropriate changes.*
2	A question was raised by Compass as to what the "material properties for the clay liner" entail, located on the master list.
2R	*An email was sent to the off-site QA Official for clarification.*
3	*Submittal 031: Cascade Aerators* was approved by Rick Wagner from NAWE
3R	*Jerry was given the go-head to order the necessary components.*
4	List of oversdue submittals was generated. Submittals missing from spec section 02261 – Geomembrane Liners – must be received by the schedule installation next week.
4R	*The list was given to Terry and he is working on getting the necessary documentation from the manufacturer.*
5	A question was raised by Compass as to what the "material properties for the clay liner" entail, located on the master list. (Originally reported on 08/20/2007)
5R	*QA Official resolved the situation and said it is not required on this project.*
6	Two Submittals marked as 034.
6R	*Brought to Jerry's attention. Submittal 034: Liner Installer* – Installation Instructions, Certification, Qualifications, Schedule, Equipment, Sample, Warranty and Drawing should be changed to Submittal 033.

SUBMITTALS RECEIVED	
1	*034: Liner Installer* – Installation Instructions, Certification, Qualifications, Schedule, Equipment, Sample, Warranty and Drawing
2	Submittal 034: Weir Gates
3	Submittal 035: Decontamination Plan
4	Certs for four rolls (out of 35 total) of the 80-mil geomembrane liner. (No submittal sheet was given.)

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

08/30/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

08/30/2007
Date

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, August 30, 2007
9:00 a.m. – 9:37 a.m.

SECOR

ATTENDEES			
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*BP/ Atlantic Richfield*	*CDM*
Ken Hannon	Jerry Resnik	Joe Sontchi	Khaled Al-Akhras
Srinivas Kappagantula			
Stephanie Andrews			

1. Safety

- No safety issues
- Safety observations reports have diminished. Compass management will discuss with workers.
- Compass has worked a total of approximately 2645.5 manhours with 1603 safe manhours.

2. Work Performed

- Pilot Trench installation
  - Approximately 138 feet of the Pilot Trench from Manhole H to the north has been excavated to date.
  - The top six to ten feet of soils along the Pilot Trench route from Manhole H to 200 feet south has been excavated. The soils were removed to facilitate trench excavation in this area next week. The trench has not been opened to groundwater elevations in this area.
- Various Administrative Items
- Design changes—constructability issues
  - Valve will be added to the interior of the manholes on the infiltration pipe to allow for isolation of the manholes.
  - The infiltration pipe in the south leg of the trench from Manhole H will be installed flat at elevation 1482'. The pipe length shall be 20 to 30 feet. This design change may be implemented for all manholes (pipe elevations to match the manhole pipe invert elevations).

3. Work Projected

- Cut, haul, fill and compact Surface Flow Wetlands
- Functional completion of the Pilot Trench
  - The utility corridor will not be completed at this time.
- Weld pipe
  - Roughly 70-80 forty-foot sections left
- Clean frac tanks
- Set up full scale trench, pending approval by BP and SECOR
  - Clearing and grubbing of the trench;
    - Aiming to clear 500 feet to 1000 feet of vegetation along the trench at a time.

- The access way may begin as early as next week and full scale clearing and grubbing may begin in a week or two.

- Other
  - Additional personnel:
    - Wednesday, September 5: Todd Weaver – Dozer operator
    - Monday, September 10: 4 additional Compass workers

4. Schedule

- 9 + days behind schedule

5. Scope Items

- BP and SECOR to determine whether manholes or wells will be installed in northern section of site.
- Cascade Aerator, esp. steps
  - The final design as presented at the time of bidding has been revised. Compass is obtaining quotes from bidders to complete the concrete work.
  - Compass indicated that the constructible design increased the size of the porcelain bowls by roughly 66 percent and increased the step area by an additional 50 percent, and the steps can not be poured monolithically.

6. Open Items

7. Visitors Anticipated

- Todd King from Compass Environmental, Inc.

8. Administrative Issues:

- Overdue submittals:
  - Spec section 02110A-Site Preparation and Clearing:
    - Utility Location Subcontractor Qualifications
  - Spec section 02115A-Erosion and Sediment Control Measures:
    - Samples for the Geotextile materials for silt fence, roadways, entrances and swales.
  - Spec Section 02210A-Earthworks:
    - *Aggregate Backfill*:
      - Plasticity Index
      - Classification
      - Standard Proctor
  - Spec Section 02661-Geomembrane Liners:
    - Resin:
      - Statement of the production date or dates
      - Certification that resin is from the same manufacturer
    - Documentation that for each 10,000 sf of geomembrane to be installed and for each batch of resin shipped has been tested.

- Break strength of the thread

- Yet to review:
  - *Submittal 035: Decontamination Plan*

9. Other

- The Resident Engineer has asked that Compass include grade readings, the total length and total cross sectional area excavated per day in all Daily Construction Quality Assurance Reports.
- Discussion in regards to leveling of subsequent manholes
  - Problem:
    - The consistency of the material 20 feet below surface elevation has some degree of stability; however, when the 10-foot diameter steel pipe was driven into the ground and later removed after manhole "H" was installed, the stability of the subgrade diminished.
  - Compass proposed resolution:
    - The subsequent manholes will be designed to have a higher base piece (5 ½') and a higher section piece (6')--about a foot larger than the dimensions of manhole "H"--to eliminate dewatering.
      - The two pieces will be hooked together in place on grade for an hour, without tension, to see if settlement occurs.
        - If nothing happens and the manhole remains in place as positioned, backfill will promptly be placed around the manhole.
        - If the manhole displays an unacceptable lean, the unit will be picked up, additional stone will be placed under the unit and the process will be repeated, as mentioned above.

Joe Sontchi
Atlantic Richfield
EBM

9/5/07
Date

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

10/01/07
Date

Stephanie L. Andrews

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

09/05/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, August 27, 2007 – Thursday, August 30, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS
James Ball, Land Surveyor

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Fred Eysaman	Howgen Transport
Thomas Dell	Howgen Transport
Jeff Pixley	Howgen Transport
Ron Giroux	Howgen Transport
Eric Kurtz	Milton Cat
Brenda Grover	Graves Toilets
Ryan Wiemer	Welmer Concrete
Brandon Smith	UPS
Craig Morton	Shorts
Mark Kelner	Kelner Supply
Lyndsey Peters	American Red Cross
Jody Firster	Godwin Pumps
Norm Braun	Pariso Trucking
Chad Lincoln	JD Leydecker

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
16 loads of stone – Pilot Trench (581.35 tons)		X
Godwin CD150M/4045D/RGT 6" Dri-Prime Pump	X	
6" Female Godwin QD x 6" Male Evertite	X	
6" x 10' HD Suction Hose w/Godwin Q.D.	X	
6" x 20' HD Suction Hose w/Godwin Q.D.	X	
6" x 50' HD Discharge Hose w/Evertite	X	
Godwin CD150M/4045D/RGT 6" Dri-Prime Pump	X	
6" FQD Suction, 6" Met Discharge	X	
3" x 20' HD Suction Hose w/Evertite	X	
6" x 20' HD Suction Hose w/Godwin Q.D.	X	
6" x 50' HD Discharge Hose w/Evertite	X	
6" Female Godwin Q.D. x 6" 150# Flange Mounted on Suction	X	
6" Male Evertite x 6" Flange Mounted on Discharge	X	
3" x 50' HD Discharge Hose	X	
Weiser Concrete Cascade Aerator Splitter Box		X
Weiser Concrete Cascade Aerator Lids (2)		X
Weiser Concrete Manhole H – Section 4		X
LCW SSS Equipment	X	

ACTIVITIES DURING THE WEEK
Remove 10-foot diameter steel pipe from Manhole H

Clearing of trees and shrubs along Pilot Trench north of Manhole H route
Excavate approximately 138 feet of the Pilot Trench from Manhole H to the North
Check depth measurements to ensure proper elevation prior to aggregate backfill and post backfill
Backfill Pilot Trench north of Manhole H with aggregate stone
Place geotextile approximately 40 feet from Manhole H to the North and backfill using native soil
Excavate top six to ten feet of soils along Pilot Trench from Manhole H to 200 feet South
Jar test 16 loads of gravel (Gravel stored west of pilot trench; to be used as trench permeable backfill)
Set-up soil staging area
Finish installing perimeter fence and gates around parking area
Pump rainwater out of Sedimentation Pond
Move Icon equipment and other materials to decon pad

MEETINGS

H & S Meeting at 7:00 AM ***Monday thru Thursday***

- Announce agenda for the day.
- Discuss safety concerns and precautions.
- Issue permits.
- There are too many people around the excavation site. Jennifer Menges suggested delineating an area for observing excavation using caution tape. (Tuesday)
- Make eye contact with operators when walking within their swing radius. (Wednesday)
- Compass established a new procedure for reviewing JSAs. (Wednesday)
- A Health and Safety Official must be on Site if Compass decides to work late. Also, permits must be extended past the 5:30 pm deadline. (Thursday)

H & S Meeting at 12:45 PM ***Monday thru Wednesday****; H & S Luncheon at 12:00 PM* ***Thursday***

- First Aid and CPR Training on Monday at 1:00 PM

Weekly Progress Meeting at 9:00 AM, ***Thursday, August 30, 2007***

- No safety issues
- Work performed
- Work projected for next week
- Schedule – roughly 9 days behind
- Scope Items: Cascade Aerator bowls, manholes or wells?
- New Compass personnel will be arriving on: Wednesday, September 5-Todd Weaver (dozer operator) and Monday, September 10-four additional personnel
- Discussion on the leveling of subsequent manholes
- Attendees: SECOR – Ken Hannon, Srinivas Kappagantula, Stephanie Andrews; Compass – Jerry Resnik; BP/Atlantic Richfield – Joe Sontchi; CDM – Khaled Al-Akhras
- ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS

1	The 10-foot diameter steel pipe took a majority of the morning to remove from the ground. This may become a time constraint for subsequent uses.
2	Wind storm over the weekend lifted up some left over debris by the demolished building south of the vertical flow wetlands. Some of the debris has protruding nails.
2R	*Compass and SECOR are aware of the issue. Compass to remove debris.*
3	Manhole H tilted to the North after the 10-foot diameter steel pipe was removed primarily due to the uneven settlement of the subgrade. The manhole faced East before the pipe was removed.
4	Pilot trench excavated to North of Manhole H is nearing completion. Approximately 10' feet more to be excavated to completion.
5	Temporary fence installed all around the trench and access to the trench from safety standpoint.

DESIGN CONCERNS AND RESOLUTIONS

1	SECOR PM reviewed the C-16b design issue (see Daily QA Report 08/24/2007).
1R	*Compass to review concrete requirements and discuss with BP & SECOR.*
2	The 4-inch diameter perforated pipe will extend about 20 to 25 feet north from Manhole H at elevation 1482' msl, with the remainder of the pipe at a 45° angle.
3	The 4-inch diameter perforated pipe will extend about 25 feet south from Manhole H at elevation 1482' msl,

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	The Weekly Progress Meeting Minutes were distributed earlier today and Compass has some issues regarding overdue submittals.
1R	*QA Official will sit down with Jerry Resnik and Terry LeMasters tomorrow (08/28/2007) to review.*
2	An updated over-due submittal list was electronically distributed to Jerry Resnik and Terry LeMaster for review.
3	A submittal for the liner used in the soil staging area has not been received.
3R	*This issue has been directed to Terry LeMasters and Jerry Resnik.*

SUBMITTALS RECEIVED	
1	L.C. Whitford Co. Inc./Triple S Security Co. Fencing Installation (No submittal sheet was given.)

K. Srinivas — 9/01/07

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

Date

Stephanie L. Andrews — 09/06/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Date

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, September 6, 2007
1:35 p.m. – 1:58 p.m.

SECOR

ATTENDEES			
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*BP/ Atlantic Richfield*	*CDM*
Ken Hannon (via phone)	Jerry Resnik	Joe Sontchi	Khaled Al-Akhras
Stuart Klaus	Todd King		
Stephanie Andrews			

1. Safety

- No safety issues
- Compass has worked a total of approximately 2753.5 manhours with 1711 safe manhours

2. Work Performed

- Substantial completion of the Pilot Trench south of Manhole H by Friday, September 7
- Clean frac tanks
- Various Administrative Items

3. Work Projected

- Cut, haul, fill and compact Surface Flow Wetlands
- Complete Pilot Trench by Friday, September 14
- Weld pipe
    - Roughly 70-80 forty-foot sections left (estimated to take three days)
- Prepare for next phase
- Prep work for the Sedimentation Pond liner
    - Compaction and compaction testing
    - Picking rocks (scheduled for Saturday, September 15)
    - The liner installers will be here on Monday, September 17 for training and will begin the installation of the Geomembrane liner on Tuesday, September 18
- Other
    - Additional personnel:
        - Monday, September 10: Four additional Compass workers

4. Schedule

- 9 + days behind schedule
- As of Thursday, September 6, work hours will be 7:00 AM to 8:00 PM
    - Security will lock the gates at 5:30 PM and after that no visitors will be permitted on the Site
- Compass has scheduled to work on Saturday, September 15

5. Scope Items

6. Open Items

7. Visitors Anticipated

- Various

8. Administrative Issues:

- Overdue submittals:
  - Spec section 02115A-Erosion and Sediment Control Measures:
    - Samples for the Geotextile materials for silt fence, roadways, entrances and swales
  - Spec Section 02210A-Earthworks:
    - *Aggregate Backfill*:
      - Plasticity Index
      - Classification
      - Standard Proctor
  - Spec Section 02661-Geomembrane Liners:
    - Resin:
      - Statement of the production date or dates
      - Certification that resin is from the same manufacturer
    - Documentation that for each 10,000 sf of geomembrane to be installed and for each batch of resin shipped has been tested.
    - Break strength of the thread

- Yet to review:
  - *Submittal 035: Decontamination Plan*

- Documentation Requests:
  - Spreadsheet of the latest round of jar test results from Monday, August 27, 2007
  - Daily trench measurements
  - Daily Construction QA Reports from August 29 and 30, and September 5, 6, and 7

9. Other

- An 8-hour training course will be held Monday, September 10 for four Compass workers
- On Monday September 18, an additional 8-hour training course will be held for the Geomembrane liner installers
- Compass has looked at solutions for the trenching along the first building towards the northern portion of the site:
  - Appropriate machinery may be implemented
  - Shift the centerline of the trench away from the building
    - Compass will conduct measurements and submit to BP and SECOR to review
    - Issues/concerns:
      - Will this interfere with the construction of the slurry wall?

- Compass has evaluated the issue regarding electrical poles and overhead wires in the area of trench excavation as previously mentioned in the meeting minutes dated August 17, 2007
    - Mark Fleri has been requested by Compass to be on Site for any electrical work
- Compass has proposed the idea of using flags to serve as daily milestones for Compass workers. These flags will indicate work to be completed by the end of each work day.

Joe Sontchi
Atlantic Richfield
EBM

Date

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

11/1/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

10/01/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Wednesday, September 5, 2007 – Friday, September 7, 2007

SECOR

PARTIES ON SITE
Atlantic Richfield/BP
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Jeff Murray	FedEx
Marvin Grover	Grover Toilets
Sean Pratt	Kellner
Chris Murray	Argentieri Cleaners
Rich DePietro	Everready Express
John Hardy	Vantage Equipment
Kathren Young	NYS Senator
Brad Thompson	Wellsville Mayor
Bruce Johnson	BP
Chris Melroth	Capital Consultants
Bob Miner	Price Minor Creative Strategies

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
ICON equipment	X	

ACTIVITIES DURING THE WEEK
Placement of Geotextile above aggregate backfill in North run of the Pilot Trench totaling about 120 feet
First lift of soil added above the Geotextile in the North run of the Pilot Trench
Finish North run of Pilot Trench
Excavation of 112 feet of the Pilot Trench measured from Manhole H to the South side
Backfill Pilot Trench with aggregate fill
Place Geotextile in Pilot Trench South of Manhole H over aggregate fill
Lay first lift of native soil over Geotextile
Decon frac tanks
Graded soil in staging area to allow for additional storage
Maintenance repairs to the silt fence around soil staging area
Continue welding pipe towards Sedimentation Pond
Cut Surface Flow Wetlands

MEETINGS
*H & S Meeting at 7:00 AM **Wednesday thru Friday*** • Announce agenda for the day • Discuss safety concerns and precautions • Issue permits • Interactive JSA review • BP – Lesson Learned
*H & S Meeting at 12:45 PM **Wednesday and Thursday**; H & S Luncheon at 12:00 PM **Friday*** • Name change on Confined Space permit (Wednesday)

- Change in agenda (Friday)

Weekly Progress Meeting at 1:35 PM ***Thursday***

- No safety issues
- Work performed
- Work projected for next week
- Schedule – roughly 9 days behind
- As of today, new work hours - 7:00 AM to 8:00 PM
- Compass is scheduled to work on Saturday, September 15
- Four new Compass workers will be arriving on Monday, September 10
- Compass has looked at viable solutions for trenching along the first building towards the Northern part of the Site and an approach to handling the electrical poles and overhead wires in area of trench excavation
- ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	Issues in regards to the trench excavation measurements and readings.
1R	*After talking with Jerry Resnik, depth measurements will be taken in two spots-5 feet from each end of the trench box-and every 10 feet after the trench box is moved to the adjoining location. (Currently Compass is measuring the trench bottom at the mid point of the trench, once every 20 feet.) Also, appropriate measurements will be taken after the aggregate backfill is in place and prior to the placement of the trench liner.*
2	Some of the 6" HDPE pipes lying parallel to the South run of the Pilot Trench have some scratch and cuts on the surface.
2R	*The pipes should be inspected prior to fusing them together. The pipes with deeper marks should be thoroughly looked at to ensure that the pipe will not be an issue in the future.*
3	Excavated soil placed in the soil staging area has seeped over the silt fence causing it to detach from the posts.
3R	*Compass took care of the issue and the silt fence was reattached to the posts.*
4	Compass developed a new method to laying the Geotextile in the trench. (Geotextile is wrapped around an old rack handle and then positioned through the holes on the end of the trench box so when the box is moved, the fabric will roll itself off.)

DESIGN CONCERNS AND RESOLUTIONS	
1	The trench was excavated to about 1479', deeper than the 1482' noted on the drawing. The trench was backfilled with aggregate to about 1489'. The drawings call for the trench to be filled with aggregate to 1492'. The normal groundwater elevation is about 1491'.
1R	*SECOR will physically verify some of the trench measurements. In addition, we will require Compass to provide detailed QC reports in a timely manner.*

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	An updated over-due submittal list was distributed to Jerry Resnik at the Weekly Progress Meeting.
1R	*Jerry Resnik and Terry LeMasters sat down last week and reviewed the over-due submittals and submittals with issues. They will discuss with the QA Official when Terry returns.*
2	Terry LeMasters was notified about submitting trench measurements in Compass' Daily Construction QA Reports.
3	Terry LeMasters was notified to submit the latest round of Jar Test result to the QA Official

SUBMITTALS RECEIVED	
	NONE

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

11/21/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, September 13, 2007
13:30 – 14:15

SECOR

ATTENDEES			
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*BP/ Atlantic Richfield*	*On- Site Environmental*
Ken Hannon	Jerry Resnik		Jon Brandes
Stuart Klaus			
Penelope Padmore			

1. Safety

- While trench excavation is going on, either a H&S person or the competent person should be observing.
- Overhead wires in area where trench excavation is occurring. The Wellsville DPW has put plastic covers on the wires, and where possible, utility poles will be relocated. Compass can skip excavation beneathe them to give the Village time to relocate them, but this will have a scheduling impact.

2. Work Performed

- Completed Pilot Trench installation (except final backfill/compact, plumbing, pipes and electrical.)
- Installed the precast concrete structure and perforated pipe for Manhole H.
- Clear, cut and loadout full scale trench path.
- Cut and dill in wetlands area
- Install utility corridor
- Completed pipe fusing for now.
- Prep sedimentation pond and rock picking
- Commence full scale trench
- Various Administrative

3. Work Projected

- Continue full scale Trench
- Begin manhole interior construction
- Cut, haul, fill and compact at the wetlands area
- Install utility corridor
- Continue sedimentation pond preparation.

4. Schedule

- 11 + days behind schedule.
- Liner rescheduled
- Manhole delivery schedule, 1 per week.
- May need to skip manholes in trench excavation
- Liner installation has been postponed, no exact date yet.

5. Scope Items

- None

6. Open Items

- **Manhole delivery schedule. Weiser has indicated that they will be able to provide 1 manhole a week.**
- **Cascade Aerator issues: Compass has not yet been able to find a subcontractor who is interested in bidding on the project.**

7. Visitors Anticipated

- Various

8. Administrative Issues:

- Submittals:
  - If it contains a varience, and it is not stated on the front cover, it will not be accepted.
- Overdue Submittals:
  - Spec Section 01300-Submittals:
    - Vertical and horizontal accuracy of equipment .01 feet/10 secs. - This was included with the Surveyor's qualifications.
    - Offsite waste or transportation permits
    - Log of survey work
    - The survey itself
    - Health and Safety reports missing: 9/11.
    - Material properties for structural soil fill
    - Material properties for granular backfill
  - Spec Section 02210A-Earthworks:
    - *Aggregate Backfill/ Granular*:
      - Plasticity Index
      - Classification
      - Standard Proctor
  - Spec Section 02661-Geomembrane Liners:
    - Resin:
      - Statement of the production date or dates
      - Certification that resin is from the same manufacturer
    - Documentation that for each 10,000 sf of geomembrane to be installed and for each batch of resin shipped has been tested.
    - Break strength of the thread – There is no thread to be tested.

Upcoming work

Pre-liner installation meeting.

Pipe testing: 1 week in advance of pressure testing pipes, need to have in hand, written procedure for conducting test.
24 hours before testing, QA needs to be informed, in order to witness testing prior to backfilling.

Other concerns:

With the change in weather, temperature may become an issue when it comes time to lay pipe. 15060A states that pipe shall not be laid when T is below 40° F

- Yet to review:
  - *Submittal 035: Decontamination Plan*

9. Other

- The Resident Engineer has asked that Compass quantify production activity in all Daily Construction Quality Assurance Reports. (i.e., welded what length of pipe, etc.)

Joe Sontchi
Atlantic Richfield
EBM

9/19/07
Date

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

9/18/07
Date

Penelope Padmore
SECOR Engineering, P.C.
QA Official

9/18/07
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, September 10 to Friday, September 14, 2007

SECOR

PARTIES ON SITE
Atlantic Richfield/BP
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW SSS
Village of Wellsville DPW

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Steve Fesetch	Fed Ex
Brenda Grover	Grover Toilets
Fred Isiman	Howgen
Ron Eivoux	Howgen
Ron Draper	Draper
James Miller	Draper
John Garland	Milton Cat (repair)
Brenda Grover	Grover Toilets
Brent Kelley	Trout Unlimited
Erin Frame	Hertz
Bruce Cody	Short's
Joe Greenan	LaForge
Lawrence Morakic	Larry's Latrines

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
35 loads of aggregate fill for Infiltration Fence		X

ACTIVITIES DURING THE WEEK
Finished clearing and grubbing along WAG trail to N end of site.
Completed excavation of Pilot Trench (Manhole H)
Began excavation of Infiltration Trench (Manhole A)
Utility Pole at N end was relocated.
Began utility corridor in the wetlands area.
Completed pipe fusing.
Cutting, filling, rolling of lifts in the vertical wetlands. Excavating in the surface flow wetlands.

MEETINGS
H & S Meeting at 7:00 AM ***Wednesday thru Friday***
• Announce agenda for the day
• Discuss safety concerns and precautions
• Issue permits
• Interactive JSA review

•
*H & S Meeting at 12:45 PM **Wednesday and Thursday**; H & S Luncheon at 12:00 PM **Friday***
• BP – Lesson Learned
*Weekly Progress Meeting at 1:3 PM **Thursday***
• Safety issues – trench excavation oversite. • Work performed • Work projected for next week • Schedule – roughly 11 days behind • ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Continued rebuilding and reconstruction of the "pre-trench" haul road did not prevent haul trucks from getting stuck in the soft, saturated ground.
	Pedestrians at the North end were sometimes jumping the barriers – Resolution: more monitoring by safety/security personnel.
	Nuisance odor from Infiltration Trench, air monitoring results showed no measurable levels of constituents of concern.
	A Water line that had been turned off by city was excavated. Line was too old to save and will be repaired by Compass once excavation is completed. The Wellsville DPW had to shut off a second valve because of backflow.
	Fencing requirements for the site were discussed by SECOR, Compass and BP. Resolution: The fencing will be chain linked fence, for perimeter/site security, on-site fencing to indicate open excavations will be orange construction fence, open excavations (i.e., manhole H) are, whenever possible, covered by some kind of barrier, such as a length of chain link fence.
	Weather caused some delay in work. For instance, on 9/11, because of rain, the berms of the vertical flow wetlands were too wet to roll. Backfilling and compacting of the Pilot Trench was also delayed because of rain.

DESIGN CONCERNS AND RESOLUTIONS	
	Ball Surveying was not able to utilize some detail mapping due to coordinates not aligning with the base map. They were instructed via email to use Drawing C-14 for wetlands detail.

SUBMITTAL CONCERNS AND RESOLUTIONS	
034 (Weir Gates) returned for clarification	• Missing condensation vents on the stem cover. • Materials listed are correct, but no certification that the materials meet the required tests. • Compression cord: materials not listed, required to be nitrile, M6BG 708, A14, B14, E014, E034.
032-007a (QCAP) returned	• Stop work authority is incorrect • Qualifications and duties of each of the major personnel are missing • The jar test standard is 1/8 inch, not 1/4 inch.
DQAR's received	9/10 and 9/11
022 (Piezometer) returned	Specification calls for .020 slot with no filter pack, plan as received calls for .010 slot, and a filter pack.
026 returned	Need to specify that the angle iron is 3/16" thick.
041 rcv'd/returned	Geotechnical Analysis-Native Fill and Imported Material. This was returned, to be double checked by Compass.
042 received/ approved	Revised QCAP reviewed, earlier noted deficiencies have been corrected. QA approved.
012-020 returned	Hydraulic Control Splitter Structure- reviewed by QA and RE, 1. The three sections should be (from left to right) 36¼", 36 ¾", and 36¼", 2. RE recommends the following to be cast into the center walls, 4" diameter Sch. 40 ductile iron/galvanized iron nipple w/ flange adjacent gate valve. 3. Angle iron is 3/16" thick. 4. Manufacturer asked for clarification on weir gate window, there is no frame, just an opening.
043-022A received	Piezometer Materials and plan. Now specifies .020 slotted pipe. Plan not attached.

044 received/approved with variance	Bracket now states 3/16" thickness. Difference of 2" in height between floor and bottom of pipes ok'd by RE.
044 (should be 045) received	Pipe Testing Plan.

SUBMITTALS RECEIVED	
036	Fence Info
037	Utility Locator Qualifications
038	Geotextile sample
039	Submersible pump Install, O & M
040	MC-II Flow analyzer User Manual
041	Geotechnical analysis - Native fill and Imported material
042	Revised QCAP
043	Revised 021-020, Piezometer - Materials and Plan
044	Pre-Cast Outlet Structure
045 ("044")	Pipe Testing Plan
045 ("044")	Pipe Testing Plan and Mfg Rec

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

9/18/07
Date

Penelope Padmore
SECOR Engineering, P.C.
QA Official

9/18/07
Date

FORMER SINCLAIR REFINERY-OU2
WELLSVILLE, NY
BP/Atlantic Richfield

Date: Sept. 13, 2007

1. Work Performed:

   Excavate and fill for surface flow wetlands

   Weld HDPE pipe

   Complete Pilot trench

   Clearing and grubbing along access road to North end of site

   Various Administrative

2. Construction situations/deficiencies/defects:

   There were no situations, deficiencies, or defects during this period

3. Summary of tests results:

   No tests were taken during the progress reporting period

4. Signature of contractor:

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, September 20, 2007
13:30 – 14:45

SECOR

ATTENDEES			
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*BP/ Atlantic Richfield*	*On- Site Environmental*
Ken Hannon	Jerry Resnik	Joe Sontchi	
Stuart Klaus			
Penelope Padmore			

1. Safety

- The liner installation crew, scheduled to arrive on Tuesday for training, might not be fluent in English. *If required, a translator will be a part of the crew*
- While the liner installation crew is here, Terry LeMasters (QC Manager, Compass) will supervise them, and will not be able to act as the Health and Safety Officer the days that Adam Calvelage is not on site. Another person will need to be brought on site for Compass's Health and Safety Officer.

2. Work Performed

Continued installation of the Infiltration Trench
Cut and fill in wetlands area
Preparing sedimentation pond- dewatering and using rockhound to remove rocks.
Assemble manhole interior (pumps, piping, rails all assembled above ground) for MH-H; no equipment was installed in the manhole.
Constructed a 2nd soil staging area.
Various administrative

3. Work Projected

Continue excavation, backfilling and compaction of Infiltration Trench
Sedimentation pond liner installation
Manhole A delivery
Cut, haul fill and compact wetlands area

4. Schedule

Approximately 13 days behind schedule.

5. Scope Items

- Trench backfill compaction is unknown, no soils tests have been completed to verify.
- Proctor and optimum moisture results are "overdue and imminent"
- Location of the trench between manholes A and B will be moved 25' to the east to avoid hitting underground piping (that connects OU-2 recovery wells and the AR treatment building).
- Trench will cross existing utilities, such as the north sewer which is located near manhole B, the treatment building discharge line, the central sewer located between manholes D and E, the south sewer in the area of manholes F and G, or the gas line near the pilot trench. These utilities may require field modification.

- The interior piping of the manholes has been revised on Drawing C-12a to add a "T" and associated piping and valves to the screened inlet piping. The modification will allow the manhole to be isolated from influent groundwater to facilitate maintenance.
- Excavation of the trench is approaching the area of the wastewater treatment plant outfall pipe.

6. Open Items

Manhole delivery schedule- Weiser Concrete has stated that they can meet the schedule of delivering one manhole a week. The first is scheduled to be delivered Monday, Sept. 24.
Re-testing of the density of the berms in the vertical wetlands is scheduled, due to failed test results.

- **Overdue Submittals:**
  - **Spec Section 01300-Submittals:**
    - Offsite waste or transportation permits-Compass will use the Model City Landfill in NY to dispose of hydraulic fluid contaminated soils. Compass will provide necessary documentation (Compass notes that the material will be non-hazardous special waste).
    - Log of survey work required
    - **Health and Safety reports missing: 9/11, 9/12, 9/13, 9/14, 9/17, 9/18.**
    - **Daily QC reports missing: 9/18**
  - **Spec Section 02661-Geomembrane Liners:**
    - Documentation that for each 10,000 sf of geomembrane to be installed and for each batch of resin shipped has been tested
  - Submittal on the liner for the soil staging area.
  - **Submittal 024, manhole - pumps, guide rails, level switches, panel:**
    - Setting drawings with template
    - Wiring diagrams which include detailed wiring for power, signal and control systems, differentiating between manufacturer installed and field installed wiring – will not be available until after installation.
- **Sedimentation Pond Liner**
  - Pre-liner installation meeting: Contractor, Installer and Resident Engineer.
  - Liner sub grade inspection/ certification
- **Movement of soil from N end of site to stockpile**: Based on recent observations, every truck load contains, on average, 5 yards of wet excavated soil containing cobble and silt (which would require

some work before being suitable for backfill) and two yards of soils removed from the top ten feet of the excavation which are suitable to use as backfill. The two yards are used to line the back of the trucks, and act as a barrier against the saturated soils spilling out of the truck. Because of this, about 28% of the soil is being moved unnecessarily. The stockpile, as a result, is also larger than it needs to be. Handling of material needs to be minimized, per Section 01010. Compass intends to switch trucks they currently have with trucks that have tailgates. Truck availability is an issue.

- **Excavation method for working near buildings.** The method for excavating near the barreling house building and the SUNY Construction Trades building needs to be reviewed. If required, a shoring plan will need to be developed by a New York licensed PE.

- Silt fence is down at the N end of the Site, Compass needs to inspect and repair/replace it. Compass reminded that all silt fence is to be inspected and repaired daily.

- Soil stockpile does not have smooth sides, there are pockets where water is collecting at the top of the pile, and the soil is not drying. Compass will reshape pile to allow for drainage (in accordance with Section 02110, 02115 and 02715).

- Compass is waiting for contractors to submit bids for the Cascade Aerator work; no bids have been received to date. Compass may install the aerator steps without a subcontractor.

- Soils stockpile areas near the trench excavation are becoming limited as the excavation approaches areas south of manhole C. Per Section 02209A, Compass may need to prepare to excavate all soils from the trench directly unto trucks to be transported to the staging area prior to being returned to be used as backfill.

- Compass is reminded that the QC Manager must monitor and document the acceptability of fil materials with respect to the specifications.

- National Grid has been onsite to examine proposed trench location with respect to the location to one of their poles (approximately 20 feet north of manhole C). This pole may need to be temporarily relocated during the excavation of the trench.

7. Visitors Anticipated

North American Wetlands Engineering

Joe Sontchi
Atlantic Richfield
EBM

Date

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

Date

Stephanie L. Andrews, for
Penelope Padmore
SECOR Engineering, P.C.
QA Official

11/01/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, September 17 to Friday, September 21, 2007

SECOR

PARTIES ON SITE
Atlantic Richfield/BP
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
James Ball Engineering
Village of Wellsville DPW

VISITORS	
Name	***Company***
Eric Kurtz	Milton Cat
Tim Cleary Nathan McClane	Atlantic Testing Laboratories
Fred Isamen Tom Dell	Draper Trucking
Jeff Gordon	Wellsville Water Department
Nathan McLane, Timothy Cleary	Atlantic Testing Labs
Rick Holtgraver	Dimperir Services
Greg Cole, David Crow	National Grid
Brandon Smith	UPS
Dave Heater, Erin Frame, Aaron Frane, Dave Shemshek Chad McAbe	Hertz, Hertz/Anderson Trucking
Joshua Mudrick	Larry's Latrines
Jay Knapp	Short's Oil
Jeff Milks, Lance Dodge	LCW/triple S fencing
Jon Ekas	DHL
Jeremy Chilson	Vitale Trucking
Chris Murray	Agenten
Brenda Grover	Grover's Toilets
Joe Haney	John's Towing
Steve Goodrich	Southern Tier Taxi
Brian Grazcyk	Land Air Express
Bill Reese	How Baker

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
29 loads of aggregate fill for Infiltration Trench – all passed jar test		X
John Deere 230 Excavator		X
Rockhound		X
Small roller: Ingersoll Rand model SD-45TF s/n CSC59089		X
Wire for trenchbox pins		X
2 -25 ton trucks		X
3" trash pump		X

HOURS WORKED		
Item	*This week*	*To Date*
Total Compass man hours	813	4548
Subcontractor		80

Days without safety incident		30
Safe man hours		3505.5

ACTIVITIES DURING THE WEEK
Density tests performed by Atlantic Testing Laboratories (ATL) on the Vertical Wetland W berm – for results see Site/Construction Concerns below.
Excavation of the Infiltration Trench began 140 feet to the north of Manhole A and extended roughly 280 feet to the south of Manhole B. About 25 feet next to Manhole A will have to be re-excavated due to a misplaced stake. Compass opted not to excavate Manhole A or Manhole B.
Continued preparation of the sedimentation pond substrate for the liner.

MEETINGS
*H & S Meeting at 12:45 PM **Monday to Thursday**; H & S Luncheon at 12:00 PM **Friday***
• BP – Lesson Learned
*Weekly Progress Meeting at 1:30 PM **Thursday***
• Safety issues – Terry LeMasters will be supervising the liner installation crew, which is scheduled to be on site next week, under modified safety partner program. • Work performed • Work projected for next week • Schedule – roughly 13 days behind • ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Haul trucks got stuck in the moist, soft ground where pre-trenching had been attempted (200 feet north to 100 feet south of Manhole B).
	Unable to test compaction of soils in extended trench excavation as soils test data was not complete.
	Density testing on of the berm of the vertical flow wetlands yielded mixed results. More sample material from the berm was sent back to the laboratory for testing – see daily reports for 9/19/07 and 9/21/07 (results varied from 90 to 95.8% maximum compaction). The berm was excavated to a depth of four feet where additional density testing was conducted. Although the moisture content was adequate, the tested compaction (90.9% and 91.3%) did not meet the project specifications (95%).
	RE met with National Grid and On-Site concerning utility pole that is near manhole C. National Grid will be working on placing a temporary pole to support the lines during excavation. National Grid will determine what permits will be needed.
	The amount of soil being removed from the area of the infiltration trench: more soil is being handled than needs to be, since there are no trucks with gates on them, dry soil is being used at the back of the truck to keep the soil slurry from running out.
	Stock pile has areas which trap the water so that it can not drain. It needs to have the sides sloped in order to facilitate drainage. Compass is grading the stockpiles as of 9/20/07.
	More density testing of the west berm of the vertical flow wetlands did not pass. More soil was taken back to the lab to re-do Proctor test, pending Proctor results from earlier samples.
	The treatment plant's outfall pipe was encountered during excavation of the Infiltration Trench. The pipe separated, and the rubber "Fernco" fitting was re-secured and flow restored. The trench box was dug deeper than usual, the top half of the trenchbox was removed, and the box passed under the line.
	National Grid Electric was back to observe the power line (pole) that needs temporary relocation. They were concerned with excavation requirements and crew safety training requirements.

DESIGN CONCERNS AND RESOLUTIONS	
	The cleanouts between manholes do not have a specified finish detail. For surface completions of these, RE recommended a threaded removable plug placed in a steel flush mount small diameter removable protective cover set in a 4" to 6" thick 2' x 2' concrete pad flush to the surrounding ground surface.
	RE suggested changing the gate in the enclosures around the manholes to include an 8' gate rather than a 4' gate, so that a vehicle with a winch could be used to remove a pump if necessary.

SUBMITTAL CONCERNS AND RESOLUTIONS	
(no submittal #'s)	Well plan edited to show no use of sand filter pack.
	Email from Mark Tilley (Landsaver) certifying the dates of manufacture of two rolls of geomembrane by Agru America.
041	Returned to Compass by RE for correction
No submittal #	Density testing results and calibration record for Troxler gauge used in density testing

SUBMITTALS RECEIVED	
041	Revised and resubmitted
044	Returned for revisions, resubmitted to SECOR

Stuart B. Klaus

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

11/1/07
Date

Jon Lewis P. Andrews, for

Penelope Padmore
SECOR Engineering, P.C.
QA Official

11/01/2007
Date

Pre liner installation Meeting Minutes

Former Sinclair Refinery
Wellsville, New York
Tuesday, September 25, 2007

SECOR

ATTENDEES				
SECOR Engineering P.C.	*Jacques Whitford NAWE*	*Compass Environmental, Inc.*	*BP/ Atlantic Richfield*	*LandSaver*
Ken Hannon (by conference call)	Rick Wagner	Jerry Resnik	Joe Sontchi	Vong Noravong
Stuart Klaus		Terry LeMasters		
Penelope Padmore				

Moisture in sedimentation pond basin. The main problem areas are much of the bottom and the embankments on the north side. About 1/2 to ¾'s of the bottom and the north side have seeps. The presence of water presents several issues:

1. Seaming the liners needs to be done with no moisture present. For liner installation, it may be possible to remove the saturated material temporarily, replace it with dryer soil, and install the liner.
2. While this is has been a dry season, and the groundwater has infiltrated into the sedimentation pond, during the wet season if the pond is not filled, the liner may have a tendency to float.
3. The compaction of the wet areas can not be determined. While the RE and contractors have examined the soil base and believe that the liner will be sufficiently supported, a determination of the soils' adequacy to support the proposed walkway cannot be determined. The walkway may be removed from the design.

Presence of stones in subgrade: The upper 6" of the subgrade are not free of stones >1" diameter. Compass will continue to remove stones from the subgrade.The liner installer will not install liner until the subgrade is prepared. The liner installer and the RE will will examine all subgrade prior to the installation of the liner and determine whether the subgrade is sufficiently prepared.

Walkway: The walkway was intended to facilitate sampling from the center of the pond, and provide access to the center of the pond during tours. Due to moisture in the subgrade, a determination of the suitability of the soils to support the walkway cannot be completed; therefore, the walkway may be deleted from the design. A shorter walkway with a removable floating end section is an option. Another option is to remove the walkeay from the design entirely. Sampling requirements and pond access will be reviewed and considered in the future. Installing the walkway after the liner has been installed is contraindicated because it would require liner penetrations.

Rick Wagner of NAWE will prepare a test method sheet for the water balance testing of the liner.

Resumes sent from Landsaver are not those of the crew which is going to install the liner.

Certification from the manufacturer is needed which indicates the rolls passed tests indicated on page 02661 9.

Joe Sontchi
Atlantic Richfield
EBM

Date

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

11/1/07
Date

Stephanie L. Andrews, for
Penelope Hadmore
SECOR Engineering, P.C.
QA Official

11/01/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, September 27, 2007
13:30 – 14:00

SECOR

ATTENDEES			
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*BP/ Atlantic Richfield*	*On- Site Environmental*
Ken Hannon (by conference phone)	Jerry Resnik	Joe Sontchi	
Srinivas Kappagantula			
Penelope Padmore			

1. Safety

No issues

2. Work Performed

- Installation of Infiltration Trench:
  - Trench is now being excavated in the area of Manhole D, station 18+00, where the required thickness of aggregate layer has decreased from 10 feet to 8 feet in thickness, and the bottom of the trench is at an elevation of 1479.5.
  - Trench conditions have improved because of higher fines content in the material, which creates more stable trench walls, and a lower water table. However, those conditions may deteriorate as excavation advances south.
  - Two storm water structures have been encountered, one which is about 30 feet south of the SUNY building, and one to the south of the first. They appear to be 24" RCP concrete storm drains, approximately 18" to 24" below ground surface. There is water running through them. The first one was destroyed, and a pipe is on order to replace it. SECOR requested that the surveyor's take readings on the locations of the two structures.

- Haul unsuitable materials away from trench area. Two trucks with tailgates are expected to be delivered today.
- Prepare sedimentation pond
- Began liner installation
- Relocated fence behind SUNY campus
- Began building of second soil staging area.
- Source fly ash/kiln dust/Portland, to mix with saturated materials trench backfill.

3. Work Projected

- Continue installation of Infiltration trench
- Manhole deliveries
- Installation of valves/piping into manholes
- Possible installation of a manhole, based on backfill, and whether the necessary manpower is available. Depending on resources, this might take place next week.
- Cut, haul, fill and compact at the wetlands area.
- Continue preparation of sedimentation pond
- Restarting the liner installation. Liner installation expected to continue tomorrow, and might also be done on Saturday, as well.

4. Schedule

15+ days behind schedule.

5. Scope Items

Trench backfill material

6. Open Items

- **Overdue Submittals:**
  - **Spec Section 01300-Submittals:**
    - Offsite waste or transportation permits-Compass will use the Model City Landfill in NY to dispose of hydraulic fluid contaminated soils. Compass will provide necessary documentation (Compass notes that the material will be non-hazardous special waste). In order to use this landfill, refusals of the material from other landfills is required. As of October 4, BP will be able to use the Highland facility.
    - Log of survey work required- Compass will provide this to SECOR by the end of the day.
    - **Health and Safety reports, daily and weekly QA reports are all up to date.**
  - **Spec Section 02661-Geomembrane Liners:**
    - Documentation that for each 10,000 sf of geomembrane to be installed and for each batch of resin shipped has been tested – Terry LeMasters stated that he has this submittal, and will give it to SECOR by the end of the day.
  - Submittal on the liner for the soil staging area. Compass will provide to SECOR by the end of the day.
  - **Submittal 024, manhole - pumps, guide rails, level switches, panel:**
    - Setting drawings with template- Compass is working on getting this.
    - Wiring diagrams which include detailed wiring for power, signal and control systems, differentiating between manufacturer installed and field installed wiring – will not be available until after installation.
- **Sedimentation Pond Liner**
  - Liner sub grade inspection/certification – This will be from the installer.
- **Movement of soil from N end of site to stockpile**: Based on recent observations, every truck load contains, on average, 5 yards of wet excavated soil containing cobble and silt (which would require

some work before being suitable for backfill) and two yards of soils removed from the top ten feet of the excavation which are suitable to use as backfill. The two yards are used to line the back of the trucks, and act as a barrier against the saturated soils spilling out of the truck. Because of this, about 28% of the soil is being moved unnecessarily. The stockpile, as a result, is also larger than it needs to be. Handling of material needs to be minimized, per Section 01010. Compass intends to switch trucks they currently have with trucks that have tailgates. Truck availability is an issue.

- **Excavation method for working near buildings.** The method for excavating near the barreling house building and the SUNY Construction Trades building needs to be reviewed. If required, a shoring plan will need to be developed by a New York licensed PE. For now, the plan is to drive sheet piling approximately 18' into the ground adjacent to the building, and remove it once trenching has been accomplished in the vicinity.

- Silt fence is down at the N end of the Site, Compass needs to inspect and repair/replace it. Compass reminded that all silt fence is to be inspected and repaired daily. Compass has repaired the fence, and will periodically inspection and repair. If there are any areas where the fence is down, Compass will repair.

- Soil stockpile does not have smooth sides, there are pockets where water is collecting at the top of the pile, and the soil is not drying. Compass reshaped it to allow for better drainage.

- One subcontractor has shown an interest in building aerator structure. A representative of the company was on site today, and is expected to present a proposal Monday

- Soils stockpile areas near the trench excavation are becoming limited as the excavation approaches areas south of manhole C. Per Section 02209A, Compass may need to prepare to excavate all soils from the trench directly unto trucks to be transported to the staging area prior to being returned to be used as backfill. This issue is an ongoing one.

- Compass is reminded that the QC Manager must monitor and document the acceptability of fill materials with respect to the specifications.

- National Grid has been onsite to examine proposed trench location with respect to the location to one of their poles (approximately 20 feet north of manhole C). This pole may need to be temporarily relocated during the excavation of the trench.

7. Visitors Anticipated

BP/Atlantic Richfield Regional manager and HSE coordinator.

Joe Sontchi
Atlantic Richfield
EBM

Date

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

11/1/07
Date

Stephanie L. Andrews, for
Penelope Padmore
SECOR Engineering, P.C.
QA Official

11/01/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

FORMER SINCLAIR REFINERY-OU2
WELLSVILLE, NY
BP/Atlantic Richfield

Date: Sept. 27, 2007

1. Work Performed:

   Prepare sed pond for liner

   Start installation of liner

   Continue excavation of trench

   Various Administrative

2. Construction situations/deficiencies/defects:

   Encountered problem with under mining at the Suny building while excavating.

3. Summary of tests results:

   Several tests for compaction at the wetlands, sed pond, and trench.

4. Signature of contractor:

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, September 24 to Friday, September 28, 2007

SECOR

PARTIES ON SITE
Atlantic Richfield/BP
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
On-Site Environmental
James Ball Surveyors
Landsaver Environmental
Jacques Whitfield NAWE

VISITORS	
Name	***Company***
Craig Martin	Shorts
Jason Jeffers	Ramsco
Jeremy Chilson	Vitale
Jeff Murray	Fed Ex
John Hardy	Vantage Equipment
Craig Clark John Buckwalter Jim Jerla	Alfred State College
Tim Cleary Jared How	Atlantic Testing Labs
Aaron Frame Dave Heater	Hertz
Art Roberts William Faughnan	Art Roberts Masonry
Rick Wagner	Jacques Whitford NAWE
Gerald Smith	Wilkinson Trucking
Jeff Milks	LCW SSS Fencing
Steve Pierce	John's Towing
Jay Knapp	Short's Oil
Rick Wagner	Jacques Whitford NAWE
Brad Thomson, Mayor	Village of Wellsville
Fred Eisman John Mest Randy Wende John Draper Eugene Murphy Jeff Hitchcock Marty Brehm	Howgen
Ron Gallipeau	Varitek
Doug Reed Jeff Colbert	Reed & Colbert Electric
Roy Proffrock	Estes Trucking
Jason Pearl	Kenney Trucking
Brenda Grover	Grover's Toilets
Tom Scott Jeff Murray	Fed Ex

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Manhole's A and B. Inspected and measured.		X
3 loads of wetland fill material – 107.68 tons		X
29 loads of pea gravel (Infiltration Trench aggregate) – 956.81 tons; all loads passed jar tests		X
4 Rolls of 80-mil textured Geomembrane for sedimentation pond liner		X
Genie GH-644 Fork lift		X

HOURS WORKED		
Item	*This week*	*To Date*
Total Compass man hours	693	5411
Subcontractor	132	212
Days without safety incident	5	35
Safe man hours	693	4368.5

ACTIVITIES DURING THE WEEK

Density conducted by Atlantic Testing Laboratories (ATL) on ***Tuesday, September 25, 2007 :***

Project specs require 95% of the maximum dry density, as determined by ASTM (D 698/D 1557)

Test Location	Elevation	Optimum Moistur Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
N end of Pond	-1'	5.5	140.0	7.5	135.2	96.6
Pond Btm Surface	-0'	14.5	103.0	6.5	131.9	
100' S MH-A	-10'	11.0	116.5	8.3	120.5	103.4
200' S MH-A	-9'			11.5	123.7	106.2
180' S MH-B	-5'			12.9	116.0	99.6
150' S MH-A	-6'			11.3	116.4	99.9
80' S MH-A	-5'			14.7	114.4	98.2
200' S MH-A	-5'			11.9	122.3	105.0
50' S MH-B	-4'			15.7	114.3	98.1
50' S MH-B	-4'			11.9	112.1	96.5
80' S MH-A	-5'			16.9	110.6	95.0
70' N MH-B	-3'			13.3	118.3	101.5

Density conducted by Atlantic Testing Laboratories (ATL) on ***Wednesday, September 26, 2007:***

Project specs require 90% of the maximum dry density, as determined by ASTM (D 698/D 1557)

Test Location	Elevation	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Field Moisture Content (%)	Field Dry Density (pcf)	Compaction (%)
100' N MH-B	-4'	11 ± 3	116.5	14.0	116.2	99.7
50' S MH-A	-4'			12.9	109.4	94
75' S MH-B	-4'			13.3	104.4	90
100' S MH-A	-3'			15.9	102.4	88

Infiltration Trench Excavation began on Monday at approximately 180 feet south of Manhole B.

Continued preparation of the sedimentation pond substrate for the liner. This included removing standing water using buckets, excavating saturated soil, and replacing it with wetlands fill and using wetlands fill material as a subgrade for the liner in the bottom and embankments of the sedimentation pond.

Landsaver Environmental's liner installation crew arrived on site Tuesday for safety training. Liner installation

commenced on Wednesday. Panels were cut and placed, and some seams welded. Seaming and installation were delayed due to rain.
Thursday morning, it was noted that the overnight rain had washed the finer grained material from the embankments of the sedimentation pond, exposing rocks. Saturated soils and standing water at the floor of the sedimentation pond was present. It was decided that wetland fill material would be used in place for the liner support where saturated soils or rocks might come in contact with the liner. Water and saturated soils were removed by hand and by excavator.

MEETINGS	
	*H & S Meeting at 12:45 PM **Monday to Thursday**; H & S Luncheon at 12:00 PM **Friday*** • BP – Lesson Learned
9/25/07	*Pre-installation of liner meeting* • ***For more details see Meeting Minutes***
	*Weekly Progress Meeting at 1:30 PM **Thursday*** • Safety issues – Terry LeMasters will be supervising the liner installation crew, which is scheduled to be on site next week, under modified safety partner program. • Work performed • Work projected for next week • Schedule – roughly 15 days behind • ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	Underground structures: Storm sewer boxes and massive concrete structures, possibly building foundations, were found within the trench. The first of these was a storm sewer junction box encountered on Wednesday, approximately 85 feet south of Manhole C. It was within five feet of the surface, and had not been previously mapped. It was found ~ 20 feet north of a mapped storm sewer, which was uncovered later that afternoon. On Thursday, what appeared to be the foundation of a building was encountered. This ran parallel to, and within the Infiltration Trench. After using the excavator to probe for more buried structures, the excavation was moved to 250 feet south of Manhole D. It is expected that a jackhammer will be used to dismantle the concrete structures in the subsurface. The jackhammer is expected to arrive on site Monday, October 1. Structures are 18" below the surface in the area near Manhole D. One of the structures runs parallel and inside the Infiltration Trench for approximately 50 feet. Approximately 70' south of the southernmost extent of the first set of structures, similar ones were found at a depth of 8' below surface. Old site photographs show that in the area where the structures were encountered was the power building for the refinery, along with concrete structures which connected the power building with a dam on the Genesee River, to the east.
	Sedimentation Pond Liner: Wetlands fill is being used to supplement the liner subgrade. At the northern end of the pond, saturated soils are being removed, and fill emplaced. Heavy rain on Thursday night has washed away finer grained material, exposing rocks in the embankments. The fill will be used along the embankments to cover areas where the rocky material has been exposed.
	Srinivas Kappagantula replaced Stuart Klaus as RE on Thursday, Sept. 27.
	The excavation of the trench next to the SUNY Trades building was (South of MH-C) was temporarily stopped because of the instability of the trench. The excavation was temporarily backfilled; the excavation will continue when the soils stability issue is addressed.

DESIGN CONCERNS AND RESOLUTIONS	
	There are no finished details for the surface cleanouts. RE Stuart Klaus recommended a threaded removable plug placed in a steel flush mount small diameter removable protective cover set in a 4" to 6" thick 2' x 2' concrete pad flush to the surrounding ground surface.
	RE suggested changing the gate in the enclosures around the manholes to include an 8' gate rather than a 4' gate, so that a vehicle with a winch could be used to remove a pump if necessary.

SUBMITTAL CONCERNS AND RESOLUTIONS	
044	(revised pipe testing plan) returned for editing.

SUBMITTALS RECEIVED

	Surveyor's log
	Cover sheets with submittal numbers for previously received documents
	Testing certificates for 80 mil textured liner
046	As-builts for Sedimentation Pond
	Soil report from Atlantic Testing Lab
061	Soil staging area liner
060	Electrical Components
	Resumes for liner installation crew.

K. Srinivas

Srinivas Kapagantula
SECOR Engineering, P.C.
Resident Engineer

11/01/07
Date

Stephanie L. Andrews for

Penelope Padmore
SECOR Engineering, P.C.
QA Official

11/01/2007
Date

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Friday, October 5, 2007
1:13 p.m. – 2:00 p.m.

SECOR

ATTENDEES		
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*BP/ Atlantic Richfield*
Ken Hannon	Jerry Resnik	Joe Sontchi
Stephanie Andrews		

1. Safety

- No safety issues
- Compass has worked a total of approximately 6244 manhours with 5031.5 safe manhours

2. Work Performed

- Continue to install full scale Infiltration Trench
- Haul unsuitable materials away from the trench area to soil staging area
- Continue to backfill and compact north end trench
- Work soil for backfilling
- Complete liner installation
- Installed permanent fence at the former entrance gate west of the Sedimentation Pond
- Continue to build second soil staging area as needed
- Assemble manhole interiors – suitable to drop into place
- Various Administrative Items

3. Work Projected

- Continue installation of fill scale Infiltration Trench
- Assemble interiors and set manhole – primary focus for the upcoming week
- Work soils for backfilling
- Continue to backfill full scale Infiltration Trench
- Other
    - Possible work on the Sedimentation Pond and Wetlands
    - Break concrete wall, running parallel to the Infiltration Trench between Manholes D and E, encountered on 09/27/2007

4. Schedule

- 14 + days behind schedule

5. Scope Items

6. Open Items

Fencing: Joe Sontchi has asked Compass to locate where the new permanent fencing will be installed. In addition, the cattle gate located near the aerator system is an issue and needs to be addressed.

Compaction testing at the Vertical Wetlands: Testing of the vertical wetlands berm conducted on September 21, 2007 failed twice. New sample material from the berm may need to be sent to the laboratory for additional proctor testing. Compass to provide approach for resolving this issue.

Water balance testing: A date has not been scheduled to conduct a water balance test at the Sedimentation Pond. Compass is looking into possible sources of water to fill the pond.

Excavation method for working near buildings: Compass has looked into the needs for a shoring plan for trenching along buildings; however, they have not yet formalized a plan.

QC: Compass is reminded that the QC Manager must monitor and document the acceptability of fill material with respect to the specifications.

Excavation of Infiltration Trench along SUNY Masonry building: On Monday, October 1, 2007 at approximately 2:45 PM, the rear brick wall of the SUNY Masonry building collapsed. Compass immediately stopped work and began to backfill the trench in order to support the wall. The Resident Engineer for SECOR verified that no one was in the building and the Health and Safety Officer roped off the building with caution tape to prevent people from accessing the building. The college was notified of the damage sustained to the building and relocated classes until a structural engineer could be brought in to assess the damage.

7. Visitors Anticipated

- BP – Friday 10/05/2007

8. Administrative Issues:

- **OVERDUE/MISSING SUBMITTALS**
  - **02209A – Soil and Sediment Removal / Handling / Placement**

    Page 02209A-1 – In the RAWP
    - Written procedure describing the methods proposed for excavating and handling soil including movement of excavated material to the on-site materials handling.

    Page 02209A-2
    - See Part 2: Products, Section 2.1 – General

  - **02210A – Earthworks**

    Page 02210A-2:

- Aggregate Backfill / Pipe Embedment – *These are not applicable for stone and were eliminated by RE (SK) sometime ago.*
    - Plasticity Index
    - Classification
    - Standard Proctor

- **02661 – Geomembrane Liners**

  Page 02661-4 – Submitted on 10/10/2007
  - Statement of production date or dates
  - Certification that all resin is from same manufacturer

  Page 02661-5 – Submitted on 10/03/2007
  - Repair documentation

  Page 02661-6 – Submitted on 10/03/2007
  - Log of Geomembrane repairs

  Page 02661-8 – Submitted on 10/10/2007
  - Weight of processing aids, antioxidants and other additives other than carbon black is not more than 1 percent by weight of finished Geomembrane and not more than 3 percent by weight with carbon black.

  Page 02661-22 – Waiting for warranty from manufacturer
  - Warranty from Installer for one year following the date of Geomembrane acceptance.
  - Warranty from manufacturer that workmanship is free of defects at the time of sale and against deterioration for the next 20 years.

- **02831A – Fencing**

  Page 02831A-3:
  - Concrete properties

  Page 02831A-5 – Just an FYI.
  - States that the "posts shall be placed and aligned in the center of the holes, six inches above the bottom and set in concrete." According to as-built drawings, posts were installed to a depth of three inches above the bottom of the concrete blocks.

- **15500A – HDPE Pipe and Fittings**

  Page 15500A-3 – Will receive of 10/11/2007
  - Each production lot or pipe shall be tested for:
    - Percent carbon
    - Dimensions
    - Ring tensile strength

Page 15500A-12:

- Written procedure for conducting pressure and hydrostatic tests in accordance with the manufacturer's recommendations/requirements.

Page 15500A-13:

- Inspection and test certificates
- Product data for all equipment

- **SUBMITTAL LOG ISSUES**
  - *Submittal 017: Splitter Structure Diagram –Structure was delivered before comment received. Manufacturer states that varience of 7/10ths of one percent is well within industry standards for precast concrete structures.*
    - The issue regarding the width of inner cells of the plan view (36 1/8", 35 3/4" and 36 1/8" vs. SECOR drawings 3-36") has yet to be resolved.
  - *Submittal 020: Hydraulic Control Splitter Structure and Submittal 021: Hydraulic Control Splitter Structure – Structure was delivered before comment received. Manufacturer states that varience of 7/10ths of one percent is well within industry standards for precast concrete structures.*
    - The issue regarding the width of inner cells of the plan view (36 1/8", 35 3/4" and 36 1/8" vs. SECOR drawings 3-36") has yet to be resolved.
    - RE recommends the following to be cast into the center walls: 4" diameter Sch. 40 ductile iron/galvanized iron nipple with flange adjacent gate valve.
  - *Submittal 022: Piezometer Materials and Plan – Looking into request*
    - Need product info on screens and other accessories as shown in the shop drawing
  - *Submittal 024: Manhole – Pumps, Guide Rail, Level Switches, Panel:*
    - Setting drawings with template – *these are contained in the manuals previously submitted*
  - *Submittal 034: Weir Gates – Resubmitted on 10/04/2007 as Submittal # 062*
    - Returned to Compass on September 12, 2007 for corrections/verifications. Has not been resubmitted to SECOR QA Official.
      - Missing Condensation vents on the stem cover
      - Materials listed are correct but no certification that the materials meet the required tests
      - Compression cord – materials not listed; required to be nitrile, M6BG 708, A14, B14, E014, E034

- *Submittal 044: Pipe Testing Plan – Returned to SECOR on 09/26/2007*
  - Returned to Compass on September 26, 2007 for revisions. Has not been resubmitted to SECOR QA Official.

- *Submittal 054: Monitoring Well Installation and Testing*
  - Well Installation still reads "0.010 slot schedule 40 PVC well screen." This should read "0.020 slot....." - *Submitted on 09/12/2007 as Submittal # 043*

- **BILL-OF-LANDINGS NOT YET RECEIVED**
  - 10' diameter steel pipe (August 22, 2007)
  - Weiser Concrete Cascade Aerator Splitter Box (August 29, 2007) – *Received 10/09/2007*
  - Weiser Concrete Casacade Aerator (August 29, 2007) – *Received 10/09/2007*
  - Weiser Concrete Manhole H – Section 4 (August 29, 2007) – *Received 10/09/2007*
  - Small roller – Ingersoll Rand Model SD-45TF (September 17, 2007)
  - Wire for trench box pins (September 17, 2007)
  - Deere Excavator, Model #230C CC (September 18, 2007) – *Received 10/09/2007*
  - Bucket for excavator (September 18, 2007)
  - 2-25 ton haul trucks (Date unknown) – *Received 10/09/2007*
  - 3" Trash pump (Date unknown)
  - Genie GH-644 Fork Lift (September 25, 2007)

- Yet to review:
  - *Submittal 035: Decontamination Plan*
  - *Submittal 060: Electrical Components*

9. Other

- In regards to the collapse of the rear wall of SUNY's Masonry building, all of the following recommendations via the structural engineer have been completed according to Compass: disconnecting utilities in the portion of the building damaged; isolating the damaged area from the remainder of the building; and supporting the roof of the damaged portion of the building prior to reoccupying the remainder of the building.

- Compass has received a bid for the aeration system. Jerry Resnik has reviewed the drawings and is comfortable with the stability of the design. Compass will meet with BP and SECOR at a later date to discuss details of the system.

- National Grid scheduled to be on-site on Monday, October 8, 2007 to relocate the pole located approximately 20 feet north of Manhole C.

Joe Sontchi
Atlantic Richfield
EBM

Date

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

11/05/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

11/01/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

FORMER SINCLAIR REFINERY-OU2
WELLSVILLE, NY
BP/Atlantic Richfield

Date: October 4, 2007

1. Work Performed:

   Install liner in sed pond. (completed Wed)

   Mixing fly ash with staging area soils

   Continue excavation of trench

   Various Administrative

2. Construction situations/deficiencies/defects:

   None

3. Summary of tests results:

   Several tests for compaction at the wetlands, sed pond, and trench. (results submitted)

4. Signature of contractor:

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, October 1, 2007 – Friday, October 5, 2007

SECOR

PARTIES ON SITE
Atlantic Richfield/BP
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
LCW / SSS Fencing
James Ball Land Surveyor
Landsaver

VISITORS	
Name	***Company***
Khaled Al-Akhras	CDM
Brenda Grover	Grover Toilets
Jared Howe	Atlantic Testing Laboratories
Kevin Glaser	NYSDEC
Jim Jerla	Alfred State College
Fred Eisaman	Howgen
John Mest	Howgen
Greg Nickerson	Howgen
Randy Wende	Howgen
John Payne	Howgen
Jack Rice	Howgen
Ron Draper	Howgen
Tom Swift	Clark Patterson
Roy Struble	Roy Struble Truck
Vine Lucas	Roy Struble Truck
Chris Preischel	Preischel Bos Tires
Aaron Frame	Hertz
Bill Byers	Hertz
Dave Heater	Hertz
Jeff Culbert	Reed Culbert Electric
Craig Martin	Shorts
Al Swelonski	Mabey
John Armstrong	BP/Atlantic Richfield
Dan Hardisty	BP/Atlantic Richfield
Patricia Gallery	BP/Atlantic Richfield
Sean Munrick	Larry's Latrines
Brandon Smith	UPS
David Smith	Bama Truck Line
Bill Byers	Hertz
Charles Baker	Vitale Trucking

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Sections 1 thru 4 of Manhole C		X
ICON equipment	X	
Hertz roller (not working properly)	X	
Hertz roller		X
Volvo haul truck with tailgate		X

36 loads of pea gravel (Infiltration Trench aggregate) – 1,063.58 tons, all passed jar test		X

ACTIVITIES DURING THE WEEK
Install and weld together Geomembrane liner in Sedimentation Pond
Replace fencing along Brooklyn Avenue near the Sedimentation Pond
Install top bar and barb wire on fencing along Brooklyn Avenue
Backfill and compact anchor trench around the Sedimentation Pond
Clearing and grubbing of vegetation along Infiltration Trench south of Manhole E
Excavated approximately 750 feet of the Infiltration Trench 350 feet south of Manhole D to 47 feet north of the Pilot Trench overlap
Backfill 750 feet of the Infiltration Trench with pea gravel (aggregate stone) spanning 350 feet south of Manhole D to 47 feet north of the Pilot Trench overlap
Place approximately 800 feet of Geotextile liner over the aggregate stone spanning 350 feet south of Manhole D to 47 feet north of the Pilot Trench overlap
Place 12" lifts (compacted to 8") in Infiltration Trench north and south of Manhole A, north and south of Manhole B, north of Manhole C, north and south of Manhole E, and north of Manhole F
Cut and fill Surface Flow Wetlands Cell 1, beds 1 and 2
Partially cut and fill Surface Flow Wetlands Cell 2, bed 1
Decon two of the 250D John Deere haul truck
Mix fly ash with excavated soil in the soil staging area and at the northern most portion of the Site.
Fly ash infused soil was placed in lifts -5', -4', -3' and -2' south of Manhole B; lifts -3' and -2' north of Manhole C; lifts -6', -5', -4', -3' and -2' north of Manhole E; lifts -4', -3' and -2' south of Manhole E; and lifts -3' and -2' north of Manhole F. Lifts -1' and 0' south of Manhole B, north of Manhole C, north and south of Manhole E, and north of Manhole F were backfilled with native soils.
Lay poly liner in the soil staging area
Density testing was conducted on Wednesday, October 3, 2007, Thursday October 4, 2007, and Friday, October 5, 2007. For results see the respective Daily Quality Assurance Reports.

MEETINGS
H & S Meeting at 7:00 AM ***Wednesday thru Friday*** • Announce agenda for the day • Discuss safety concerns and precautions • Issue permits • Interactive JSA review • Beware of local drivers • Workers are reminded to clean up the garbage laying around the Site • Review fly ash dangers, precautions, PPE and first aid
H & S Meeting at 12:45 PM ***Wednesday and Thursday****; H & S Luncheon at 12:00 PM* ***Friday*** • No changes to construction activities. • Distribute BP Health and Safety pamphlets • BP Lesson Learned – Diving Incident • BP Major Incident Announcement (MIA) – Fatality caused by malfunctioning fire extinguisher • Reminder to workers to wear the appropriate hand protection when applicable • UV index is high. Apply sunscreen as needed • Watch out for yellow jackets • A designated entry/observation point was made for those visiting the site. The entrance will be north of the Masonry building and the observation point will be to the north of the Infiltration Trench
Weekly Progress Meeting at 1:13 PM ***Friday*** • No safety issues • Work performed • Work projected for next week • Schedule – roughly 14 days behind • Open Items • ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
1	Jim Ball surveyed the northern most portion of the infiltration trench including the foundation encountered between Manhole C and Manhole E. The foundation that was encountered last week is located approximately 197.7 feet south of Manhole C and spans approximately 213.5 +/- feet, in the vicinity of Manhole D. Equipment is expected to arrive tomorrow to tear down the foundation wall.
2	While excavating the infiltration trench (about 25 feet to the south of Manhole E), the back brick wall of the Masonry building – belonging to SUNY – began to collapse. Compass immediately stopped excavating and began to backfill the trench in order to support the foundation and the outside wall. The RE verified that the building was empty and that no one was in the vicinity of the building. The Health and Safety Officer was called out to the Site and the building was roped off with yellow caution tape. A structural engineer will need to be brought in to determine if the building can be occupied or not. Until then, SUNY was instructed not to use the building.
3	A structural engineer was called on-site by Compass to assess the condition of SUNY's Masonry building. The engineer recommended disconnecting utilities in the portion of the building damaged; isolating the damaged area from the remainder of the building; and supporting the roof of the damaged portion of the building prior to reoccupying the remainder of the building.
4	While excavating the infiltration trench, an issue arose regarding the total distance and the number of trench box pulls – the actual excavated length does not meet operator's measurements/readings. After evaluating the situation, it was determined that the Compass operator missed the first reading of the day.
5	Compass will pull the trench box 18 feet with two feet of overlap. Red spray paint will be used to designate 18-foot intervals.
6	Encountered South Storm Sewer line (roughly 36" diameter) approximately 120 feet south of Manhole F.
7	The Infiltration trench spanning Manhole A to Manhole B failed the standard proctor test a number of times. A lift of soil was removed and additional fly ash was added to the soil in order to provide better compaction.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
1	Submittal 054: Monitoring Well Installation and Testing still reads "0.010 slot Schedule PVC well screen." This should be changed to read "0.020 slot Schedule 40 PVC well screen." Although this was addressed and changed on the Piezometer Plan (Submittal 043), Terry LeMasters has been notified to make the appropriate changes to this particular submittal was well.
2	*ALL* documentation specified in Specification 02661 – Geomebrane Liners is to be installed was requested by the end of the day on Wednesday, October 3, 2007.
3	An updated list of overdue/missing submittal, submittals received with variances or outstanding issues and missing BOL's was given to Terry LeMasters on Thursday, October 4, 2007.

SUBMITTALS RECEIVED	
1	Daily Health and Safety Reports for 09/26, 09/27, 09/28, 10/01 and 10/02
2	Daily QA Report for 10/01, 10/02 and 10/03
3	Geomembrane liner documentation from Landsaver
4	BOL's for pea gravel (Infiltration trench aggregate)
5	Atlantic Testing Laboratories documentation
6	(2) Melt Index Test results and (2) Density Test results for each lot of Geomembrane liner received – Specification 02661
7	*Submittal 062*: Weir Gates
8	*Submittal 063:* 8-Way Splitter Structure
9	*Submittal 064:* Hydraulic Control Structure

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

10/10/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

10/10/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, October 11, 2007
1:30 p.m. – 2:00 p.m.

SECOR

ATTENDEES		
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*BP/ Atlantic Richfield*
Ken Hannon (via conference call)	Jerry Resnik	Joe Sontchi (via conference call)
Srinivas Kappagantula	Terry LeMasters	
Stephanie Andrews		

1. Safety

- No safety issues

2. Work Performed

- Continue to install full scale Infiltration Trench associated with manhole installation
- Continue hauling backfill
  - Lay feed around Manhole A (Friday)
- Continue hauling soils away from the trench area to the soil staging area
- Continue to backfill and compact trench
- Work soils for backfilling
- Install Manhole A and Manhole B
- Break ± 213.5-foot concrete wall located between Manhole D and Manhole E
- Continue to build 2nd soil staging area as needed
- Assemble revised manhole interiors (guiderails, pumps, etc.)
- Various Administrative Items

3. Work Projected

- Continue installation of the full scale Infiltration Trench
- Install manholes
  - Tentatively scheduled to set Manhole C on Tuesday, October 16
- Assemble manhole interiors and set manhole(s)
- Cut and fill in the Wetlands
- Continue to backfill full scale trench
- Other

4. Schedule

- 20 + days behind schedule
- Compass has set an anticipated demobilization date of November 16, 2007

5. Scope Items

6. Open Items

Sedimentation Pond:

- **Water balance testing:** A date has not been scheduled to conduct a water balance test at the Sedimentation Pond. Compass is looking into possible sources of water to fill the pond. – Compass will talk to Dave Pinney and/or the Village of Wellsville to see if there is anything that can be done to re-energize the fire hydrant by the red building located adjacent to the decontamination pad.

- **Shortened platform construction at the Sedimentation Pond:** SECOR recommends constructing a shortened platform. The platform should be constructed to the first tier on the sedimentation pond (approximate elevation 1506 ft msl) and not extended into the bottom of the sedimentation pond.

- **Rip-rap:** Compass has not yet installed the rip-rap around the upper tier of the sedimentation pond. Compass is reviewing the schedule to complete the construction of the pond (platform and rip-rap) and then conduct the water balance test.

HDPE pipe testing schedule: Compass has not designated a specific date; however, they are aiming for late October or early November.

QC: Compass is reminded that the QC Manager must monitor and document the acceptability of fill material with respect to the specifications.

Excavation of Infiltration Trench along SUNY Masonry building: On Monday, October 1, 2007 at approximately 2:45 PM, the rear brick wall of the SUNY Masonry building collapsed. The college was notified of the damage sustained to the building and relocated classes until a structural engineer could be brought in to assess the damage. The recommendations issued by the structural engineer have been completed according to Compass. Joe Sontchi is waiting to hear from the college about any remedial actions that may need to be taken in regards to the damaged building.

7. Visitors Anticipated

- None

8. Administrative Issues:

- **OVERDUE/MISSING SUBMITTALS**
  - **02209A – Soil and Sediment Removal / Handling / Placement**

    Page 02209A-2

    - See Part 2: Products, Section 2.1 – General

- **02661 – Geomembrane Liners**

  Page 02661-22 – Waiting for warranty from manufacturer

  - Warranty from Installer for one year following the date of Geomembrane acceptance.
  - Warranty from manufacturer that workmanship is free of defects at the time of sale and against deterioration for the next 20 years.

- **02831A – Fencing**

  Page 02831A-3:

  - Concrete properties

- **15500A – HDPE Pipe and Fittings**

  Page 15500A-3

  - Each production lot or pipe shall be tested for:
    - Percent carbon
    - Dimensions
    - Ring tensile strength

  Page 15500A-12:

  - Written procedure for conducting pressure and hydrostatic tests in accordance with the manufacturer's recommendations/requirements.

  Page 15500A-13:

  - Inspection and test certificates
  - Product data for all equipment

- **SUBMITTAL LOG ISSUES**
  - *Submittal 020: Hydraulic Control Splitter Structure and Submittal 021: Hydraulic Control Splitter Structure*
    - RE recommends the following to be cast into the center walls: 4" diameter Sch. 40 ductile iron/galvanized iron nipple with flange adjacent gate valve.

  - *Submittal 022: Piezometer Materials and Plan – Looking into request*
    - Need product info on screens and other accessories as shown in the shop drawing

- **BILL-OF-LANDINGS NOT YET RECEIVED**
  - 10' diameter steel pipe (August 22, 2007)
  - Small roller – Ingersoll Rand Model SD-45TF (September 17, 2007)
  - Wire for trench box pins (September 17, 2007)
  - Bucket for excavator (September 18, 2007)
  - 3" Trash pump (Date unknown)
  - Genie GH-644 Fork Lift (September 25, 2007)

- **SUBMITTALS YET TO REVIEW:**
  - *Submittal 035: Decontamination Plan*
  - *Submittal 060: Electrical Components*

9. Other

Fencing: Joe Sontchi has asked Compass to locate where the new permanent fencing will be installed. In addition, the cattle gate located near the aerator system is an issue and needs to be addressed. – New fencing will be placed where fencing has been removed.

Compaction testing at the Vertical Wetlands: Testing of the vertical wetlands berm conducted on September 21, 2007 failed twice. New sample material from the berm may need to be sent to the laboratory for additional proctor testing. Compass to provide approach for resolving this issue. – ATL was on-site on October 9, 2007 to conduct proctor tests on the southern most corner of the Vertical Wetlands. The results from the proctor test yielded a moisture content of 7.9% and a compaction of 96.7%, well within the required 95% compaction and an optimum moisture content of 7.0%. Documentation was provided to SECOR and BP.

Surface Flow Wetland compaction: The third surface flow wetland cell (northern section, near the power lines) has been filled and Compass has yet to provide compaction data. – The top priority in regards to compaction testing is currently directed at the Infiltration Trench. Once the trench is completed, the first lift of the third surface flow wetland cell will be tested before any other work is conducted on the Surface Flow Wetlands.

Excavation method for working near buildings: Compass has looked into the needs for a shoring plan for trenching along buildings; however, they have not yet formalized a plan. – Mabey Sheet and Shoring has been retained and will provide an Engineering Package for SECOR and BP to review sometime next week.

Survey Logs: Compass will submit weekly survey logs to SECOR with detailed readings of trench depths, stone backfill depths and manhole depths and any other pertinent information obtained from Jim Ball. Compass has not yet provided survey information; survey information will be provided Friday, October 12, 2007.

Soil bridging: Excavation areas of manhole installation are relatively bigger than the actual trench and have very high moisture contents (with approximately 10-12 feet of groundwater in the excavation). A single (compacted to 8-inches) lift may not support a roller or other equipment used to compact the soil. The first lift of soil filled in this excavation will be greater than 8-inches compacted in order to support compaction equipment. Two to three lifts of backfill (maximum of 2 feet compacted) of soil will be added to the excavation

initially. Hence, a soil bridge will be constructed (maximum of 2 feet) on top of the aggregate and all subsequent lifts will be compacted to target compaction parameters.

Joe Sontchi
Atlantic Richfield
EBM

Date

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

10/17/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

10/17/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

FORMER SINCLAIR REFINERY-OU2
WELLSVILLE, NY
BP/Atlantic Richfield

Date: October11, 2007

1. Work Performed:

   Tied full scale trench into Pilot trench

   Mixing fly ash with staging area soils

   Installed manhole A and B

   Various Administrative

2. Construction situations/deficiencies/defects:

   None

3. Summary of tests results:

   Several tests for compaction at the wetlands, sed pond, and trench. (results submitted)

4. Signature of contractor:

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, October 8, 2007 – Friday, October 12, 2007

SECOR

PARTIES ON SITE
Atlantic Richfield/BP
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Security
James Ball Surveying

VISITORS	
Name	***Company***
Fred Eisaman	Howgen
John Mest	Howgen
Tom Noel	Howgen
Randy Wende	Howgen
Jeff Pixley	Howgen
Ron Giroux	Howgen
Marty Brehm	Howgen
Thomas Dell	Howgen
Ron Draper	Howgen
Tim Cleary	Atlantic Testing
Chris Wrigth	Atlantic Testing
Joe Fletcher	Fletcher Trucking
Bill Polle	Conway Express
Marvin Grover	Grover Toilets
Chad Weber	Rochester Equipment
Jeff Murray	FedEx
Barry Simmons	FedEx Freight
Jay Knapp	Shorts
Bruce Cady	Shorts
Paul Delong	Verizon
Todd Estabrook	Verizon
Scott Trail	Milton Cat
Roger Fanton	Fanton Clay
Mark Kellner	Kellner Trucking
Bill Dibble	Legislator
Dick Stanford	National Grid
Ron Schlicht	National Grid
Lloyd Hollenbeck	Industrial Services
Randy Ewings	Hillside Landscaping
Jody Forester	Godwin Pumps

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
15 loads of pea gravel (Infiltration Trench aggregate) – approximately 525.03 tons; all passed jar test		X
Sections 1, 2 and 3 of Manhole D; Section 4 of Manhole E		X
Cat Model H140CS	X	
1 load of calciment (Fly ash) – approximately 24.340 tons		X

ACTIVITIES DURING THE WEEK
Excavated approximately 47 feet north of Manhole G to the Pilot Trench overlap
Backfilled 47 feet of the Infiltration Trench, excavated today, with pea gravel (aggregate stone), north of Manhole G
Place approximately 55 feet of Geotextile liner over the aggregate stone spanning from Manhole G to the Pilot Trench
Excavate Manhole A and Manhole B
Install sections 1, 2, 3 and 4 of Manhole A and Manhole B
Break ± 213.5-foot concrete wall located between Manhole C and Manhole E
Mix fly ash with excavated soil in the soil staging area and at the northern most portion of the Site.
Backfill lifts were placed in the following elevations and locations: • Lifts -6', -5', -4', -3', -2', and -1' tested at 150', 75', 80', 70'/110', 45', and 60', respectively, south of Manhole F • Lifts -6', -5', -4', -2', and -1' tested at 120'/90'/80', 150'/100', 115'/95', 120', and 85'/130' respectively, north of Manhole G contain fly ash. • Lifts (loose) -5' and -8" tested at 130' and 200'/160'/95', respectively, south of Manhole G • Lifts (loose) -5', -4', -3', -1, -19", and -0' tested at 150', 120', 130', 75'/45', 150'/110', and 80', respectively, north of Manhole H • Lifts (loose) -9', -8', -7', -6', -5', -4', -3', -2', -1', 0' tested at 25', 100', 70', 110', 100', 165', 90', 160', 180' and 200', respectively, south of Manhole H
Compaction testing was conducted on Monday, October 8, 2007, Tuesday, October 9, 2007, Wednesday, October 10, 2007 and Thursday, October 11, 2007. For results see the respective Daily Quality Assurance Reports.

MEETINGS
H & S Meeting at 7:00 AM ***Monday thru Friday*** • Announce agenda for the day. • Discuss safety concerns and precautions. • Issue permits. • Review JSAs. • Review stop work authority • Everyone on-site was reminded to be careful before sunrise and after sunset. • Workers were reminded to stay two feet from the side of the trench. Flotation devices and harnesses are needed for workers going into the trench, and a flotation device, harness and life line are needed for those entering a confined space.
H & S Meeting at 12:45 PM ***Monday to Thursday****; H & S Luncheon at 12:00 PM* ***Friday*** • No changes to construction activities. • Distribute safety articles regarding OSHA related incidents. • Reminder to workers to keep hydrated! • Compass has a new Health and Safety Officer. Everyone should add his name and number to their H & S cards. • Everyone was reminded to stay out of the swing radius of the operators and do not stand under the bucket of the excavator. • Discuss OSHA fall protection.
Weekly Progress Meeting at 1:30 PM ***Thursday*** • No safety issues • Work performed • Work projected for next week • Schedule – roughly 20 days behind • Compass has set an anticipated demobilization date of November 16, 2007 • Open Items • ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
	The excavation for Manhole A (MH-A) installation was dug using a trench box with two open sides, because of which lot of soil caved in while excavating to the required elevation. The sides of the excavation were very unstable with big soil masses from the sides falling into the excavation very often.
10/08/07 **1530**	Once the target installation elevation was achieved, an attempt was made to lift and install Sections 1 and 2 of MH-A (connected prior to installation) with the excavators 345C L and 330 D. This was done to avoid the situation where the Section 1 (lower section) of MH-A will be submerged under water, which will inhibit the installation of Section 2. According to product manuals of 345C L and 330 D a maximum load of approximately 16000 lbs can be lifted with both the excavators, while both sections of MH-A put together weighed approximately 21000 lbs. Hence, from a safety point of view, the installation was stopped at 18:15.
10/09/07 **0815**	Compass is not submitting the correct number of tests per lift per manhole of the Infiltration Trench. SECOR QA Official spoke with Jerry Resnik and Terry LeMasters and reminded them that testing should be conduct in 12" loose lifts (compacted to 8") once per lift for every 500 feet. Jerry Resnik stated that he relayed this information to the dozer operator and he would take care of it.
10/09/07 **1000**	Compass reviewed the loading capacities of the excavators (345C L and 330D) and confirmed that it is safe to lift up to 32,000 lbs with the excavator 345C L. Once, the required installation elevation for base of Manhole A (1474.35) was reached, an attempt was made to install Manhole A with both excavators. Manhole A could not be installed because it started floating. During the second and third attempts to install Manhole A, the corrugated HDPE pipe was pulled apart from the grouted fitting and the manhole kept floating. The 10' diameter steel pipe was then installed inside the manhole trench box and water was pumped out of this steel pipe using the bucket of the excavator. Approximately 5 feet of water was pumped out. Some water infiltrated into the pipe. At this equilibrium stage, there was approximately 4-5 feet of water inside the steel pipe. A fourth attempt was made to install Manhole A one section at a time. The manhole kept floating. It was decided to use clean water and fill the manhole so that it will sink. Clean water from Wellsville Fire Department was used to fill the inside of Manhole A (Section 1) while water was pumped from space between Manhole A and the steel pipe. After filling clean water to 3/4th of Section 1, Manhole A started sinking and settled at the bottom at the required elevation. Section 2 of Manhole A was then installed on top of Section 1 and both sections were leveled and aggregate was placed around Manhole A.
10/09/07 **1720**	Spoke to Todd Weaver (dozer operator for Compass) and Jerry Resnik about the backfill lifts and required testing. Significant soil compaction testing was conducted on Friday, October 5, 2007, but there was not proper documentation to support this. Jerry said that after the QA Meeting on Friday, he talked to the Todd, Mike Vails and the ATL technician, Jared Howe, and reminded them of the lift depths and the testing procedure. This morning, Jerry talked to the ATL technician and reiterated the required thickness of the lifts and the required testing procedure. From here on out, the Jerry and SECOR's QA Official will speak with the ATL technician every morning, prior to the start of work, to assure that the proper testing is being conducted and documented. In addition, the SECOR QA Official will observe, document and photo log the soil lifts backfilled daily.
10/10/07 **0910**	Terry LeMasters was given a list of compaction tests for each of the soil lifts – by Manhole and by date – that are missing. Jerry Resnik talked to the ATL technician to remind him of the testing procedure.
10/10/07 **0915**	Spoke to Todd Weaver about the number of lifts between Manhole G and Manhole H. By the time he got to this section the trench was already backfilled to roughly six feet below ground surface. Approximately three or four lifts of soil have been placed (backfilled 10/09/2007). He also explained – per our conversation yesterday – that after the trench box is positioned, a suitable slope of soil is placed so that a worker can approach the trench box safely. Once the trench box is removed, he believes that the soil surrounding the trench box collapses in to the bottom of the trench and creates an additional layer of backfill, thus reducing the number of lifts required to backfill the entire trench.

10/10/07 **1800**	Installation of MH-A required approximately 100' of compacted trench to South of MH-A to be excavated to approximately 5-7 feet below grade. Hence, this length of trench needs to be re-compacted and tested.
10/11/07 **0900**	The location of MH-B had to be moved approximately 9 feet South from the originally planned location as the North Storm Sewer runs across the originally planned location. To prevent the North Storm Sewer from collapsing on MH-B, the excavator bucket was placed in between MH-B and the North Storm Sewer.
10/11/07 **1015**	Two lifts have been placed south of Manhole H as of 10:15 AM. ATL technician conducted testing on second lifts and yielded the following results: moisture content – 8.4% and compaction – 78.7%. The technician said that he did not have a proctor for the type of material being placed in the lifts today – a sample was taken this morning and will be sent back to the lab – and he was relying on the density readings to determine the acceptability of the lift. SECOR QA Official and Resident Engineer requested that backfilling cease until a proctor could be received for the material. Todd Weaver suggested using soil extracted from the pond, which has a known proctor. The ATL technician was not happy with the consistency of the soil and suggested it not be used. Chris Wright from ATL will be on-site this afternoon to observe the stock piles and determine what to do regarding the two lifts already backfilled.
10/11/07 **1250**	SECOR RE met with Terry LeMasters and Chris Wright (PM ATL Labs) to discuss trench backfilling procedures and compaction tests. SECOR conveyed clearly that all backfill lifts should be no more than a foot and compacted to 8 inches and tested for compaction according to the specifications. Chris Wright (ATL) was made aware of the project needs and the compaction requirements.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL CONCERNS AND RESOLUTIONS	
10/08/07	*Submittal 063* (Dosing Siphon) does not indicate the use of Styrofoam insulation to be used around the pipes and top half of the dosing siphon structure as indicated on SECOR drawings. Verify that the manufacturer and Compass are aware of this. Also, the type of seal to be used around the inlet and outlet pipe is not specified on the submitted shop drawing.
	Submittal 064 (8-Way Splitter Structure): Widths of inner cells of the Plan View (36 3/8", 36 1/4" and 36 1/8") are different from SECOR drawings (3-36"). Short divider walls on the Plan View read 36 1/8", SECOR plans indicated that the cells should be 36". Also, the submitted drawing needs to specify that the "L" bracket has a thickness of 3/16"
	Submittal 065 (Hydraulic Control Splitter): Width of the inner cells of the Plan View (36 3/8", 36 1/4" and 36 1/8") are different from our plans (3-36"). The short divider walls on the Plan View read 36 1/8", SECOR plans indicated that the cells should be 36".
10/09/07	SECOR RE spoke to Terry LeMasters and asked him to submit the following information by October 12, 1007: survey log of trench depths and manhole depths.

SUBMITTALS RECEIVED	
1	*Submittal 063:* 8-Way Splitter Structure
2	*Submittal 064:* Hydraulic Control Splitter
3	Atlantic Testing Laboratories documentation for testing conducted on Friday, October 5, 2007
4	Machine Receipt for CAT Model H140CS removed from the Site on October 8, 2007
5	BOL for Calciment (Fly Ash) received October 03, 2007
6	BOL for 16-24" Class 3 Concrete Pipe (8') via RAMSCO received on September 28, 2007
7	BOL for 8-72" Diameter Circles received on September 21, 2007
8	BOL for four sections of Manhole A and 6 rolls of 1 ¼" Conseal received on September 24, 2007
9	BOL for four sections of Manhole B and 6 rolls of 1 ¼" Conseal received on September 28, 2007
10	BOL for three (3) rolls of Geotextile via FedEx received August 10, 2007
11	BOL for two (2) pieces of Fiberglass grating via Estes received on September 26, 2007
12	BOL for BDL Pipe and PLT PVP Pipe Fittings via Nason's Delivery, Inc. received on September 25, 2007
13	BOL for three (3) rolls of Geotextile via Land Air Express received on September 14, 2007
14	BOL for Manhole box via Mabey received on October 03, 2007
15	Atlantic Testing Laboratories documentation for testing conducted on October 8, 2007
16	BOL for John Deere 250 D Off Road Haul Truck
17	BOL for Volvo A-35 Off Road Haul Truck
18	BOL for John Deere 230-LC Excavator
19	BOL for Weiser Concrete Meter Box BOL for Section 4 of Manhole H BOL for Cascade Aerator Splitter BOL for 4 boxes of 1 ¼" Conseal
20	Daily Health and Safety Reports for 10/03, 10/04, 10/05, 10/08 and 10/09
21	An updated overdue/missing submittal list, in response to the list submitted to Compass last week, was received via email from Terry LeMasters.
22	Atlantic Testing Laboratories documentation from testing conducted on Wednesday, October 10
23	Requested information from Submittal 034 for the weir gates. Awaiting new submittal number.
24	Requested resin information for the Geomembrane liner. Awaiting a submittal number.
25	Survey log

K. Kappagantula

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

10/19/07
Date

Stephanie L. Andrews

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

10/19/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, October 18, 2007
1:30 p.m.

SECOR

ATTENDEES			
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*BP/ Atlantic Richfield*	*On-Site*
Ken Hannon	Jerry Resnik	Joe Sontchi	Jerry Palmer
Stephanie Andrews	Terry LeMasters		

1. Safety

- No safety issues

2. Work Performed

- Continue to install full scale Infiltration Trench
- Continue t haul, fill and compact Trench
- Cut, fill and compact at the Vertical Flow Wetlands
- Set and install Manholes C, D and E
- Various Administrative Items

3. Work Projected

- Continue installation of full scale Infiltration Trench
- Assemble manhole interiors and set Manholes F and G
- Backfill, compact and grade far North end of the Infiltration Trench
- Water line repair (time permitting)
- Other

4. Schedule

- 25 + days behind schedule

5. Scope Items

6. Open Items

Water balance testing: Compass is working with Dave Pinney and the Village of Wellsville to see if there is anything that can be done to re-energize the fire hydrant by the red building located adjacent to the decontamination pad.

Excavation method for working near buildings: Mabey Sheet and Shoring has been retained and will provide an Engineering Package for SECOR and BP to review by Monday, October 22, 2007. Shoring around the SUNY building is tentatively scheduled for the last week of October. SUNY will be given a week notice prior to installing the sheeting and pilings.

Excavation of Infiltration Trench along SUNY Masonry building: Joe Sontchi is waiting to hear from the college about any remedial actions that may need to be taken in regards to the damaged rear wall of the Masonry building that collapsed on October 1, 2007.

Waste: Compass is currently in the process of filling out paperwork.

QC: Compass is reminded that the QC Manager must monitor and document the acceptability of fill material with respect to the specifications.

7. Visitors Anticipated

- None

8. Administrative Issues:

- **REMINDER:**
  - Compass is to review *Specification 01700 – Demobilization*. All submittals, as indicated in the respective specification, must be received prior to demobilization.

- **OVERDUE/MISSING SUBMITTALS**
  - **02209A – Soil and Sediment Removal / Handling / Placement**
    Page 02209A-2
    - See Part 2: Products, Section 2.1 – General

  - **02661 – Geomembrane Liners**
    Page 02661-22 – Waiting for warranty from manufacturer
    - Warranty from Installer for one year following the date of Geomembrane acceptance.
    - Warranty from manufacturer that workmanship is free of defects at the time of sale and against deterioration for the next 20 years.

  - **02831A – Fencing**
    Page 02831A-3:
    - Concrete properties

- **15500A – HDPE Pipe and Fittings**

  Page 15500A-3

  - Each production lot or pipe shall be tested for:
    - Percent carbon
    - Dimensions
    - Ring tensile strength

  Page 15500A-12:

  - Written procedure for conducting pressure and hydrostatic tests in accordance with the manufacturer's recommendations/requirements.

  Page 15500A-13:

  - Inspection and test certificates
  - Product data for all equipment

- **SUBMITTAL LOG ISSUES**
  - *Submittal 022: Piezometer Materials and Plan –*
    - Need product info on screens and other accessories as shown in the shop drawing

- **SUBMITTALS YET TO REVIEW:**
  - *Submittal 035: Decontamination Plan*
  - *Submittal 060: Electrical Components*
  - *Submittal 066: Imported Material - Analytical*

9. Other

Compaction testing:

- *Vertical Flow Wetlands:* Compass will provide SECOR and BP with documentation concerning the missing lifts.

- *Surface Flow Wetland:* Compaction testing has not been conducted to-date on the Surface Flow Wetlands.

- *Infiltration Trench:* A proctor was received today, October 18, 2007, for the soil containing fly ash (to be used at Manhole A). Compass will relocate a crew to Manhole A to begin placing lifts using this new proctor. (*Note*: The proctor for soil containing fly ash is 121 with an optimum moisture content of 9.5 ± 3%; the proctor used previously in this area for backfill was 116.5 with an optimum moisture content of 11 ± 3%. This soil did not contain fly ash.)

Electric: Compass was in touch with Reed and Culbert on Wednesday, October 17, 2007 regarding upcoming work to be done on site. As soon as all of the equipment is wired, the equipment will be tested (anticipated to be completed by November's demobilization date.)

Seeding: Compass has subcontracted Allegany Landscape to perform the seeding on-site. Allegany Landscape will seed the appropriate areas the last weekend of October. Specifications from Allegany Landscape regarding the type of seeds, fertilizer, etc., will be provided at a later date.

Sludge lifting station: SECOR and BP have asked Compass to contact Weiser Concrete about altering the diameter of the structure to six feet. The original drawings issued by NAWE did not indicate the diameter of the structure. Weiser assumed a diameter of four feet and bid accordingly. Compass will provide documentation to SECOR and BP to review.

Fencing of WAG Trail: Compass will move three or four panels of temporary fencing from the perimeter of Manhole A to the south end of the Site to seal off the bridge located along the WAG Trail.

Schedule:

- Trees and vegetation will be picked out of the stock piles next year.
- Prior to demobilization, Compass is required to re-slope the stock piles to ensure proper runoff and to prevent ponding.
- Compass has guaranteed that the Wetlands will be cut and filled by the anticipated demobilization date, as well as setting the Wetlands structures currently on-site.
- Piezometers will be installed by a licensed driller – Nature's Way – the first week of November.

Joe Sontchi
Atlantic Richfield
EBM

Date

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

11/05/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

11/01/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

FORMER SINCLAIR REFINERY-OU2
WELLSVILLE, NY
BP/Atlantic Richfield

Date: October18, 2007

1. Work Performed:

   Installed manholes C, D, and E

   Excavating trench to tie in manholes

   Excavate trench where concrete was removed

   Continue building vertical flow wetlands

   Various Administrative

2. Construction situations/deficiencies/defects:

   None

3. Summary of tests results:

   Several tests for compaction at the wetlands, and trench. (Results submitted)

4. Signature of contractor:

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, October 15, 2007 – Friday, October 19, 2007

SECOR

PARTIES ON SITE
Atlantic Richfield/BP
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site
James Ball Surveying

VISITORS	
Name	***Company***
Tom Noel	Howgen
Fred Eisaman	Howgen
Eugene Murphy	Howgen
Jeff Hitchcock	Howgen
Dave Sebzda	Howgen
Josh Mest	Howgen
Mart Brehm	Howgen
Jeff Pixely	Howgen
Brenda Grover	Grover Toilets
Tim Cleary	Atlantic Testing
Mark Struble	Struble Trucking
Chris Struble	Struble Trucking
Brandon Smith	UPS
Marty Schmidt	BP
William Byers	Hertz
Khaled Al-Kahras	CDM
Kevin Glaser	NYSDEC
Phil Egge	Milton Cat
Dave Heater	Milton Cat
Ike Payton	Horton Trucking
William Byers	Hertz
Dwight Allen	Allegany Landscape
Joshua Murdock	Larry's Latrines
Bruce Cody	Shorts
Mike Tompson	Shorts
Jay Knapp	Shorts
Phil Luce	Shorts
Jeff Murray	FedEx

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
2 loads of Calciment (Fly Ash) – approximately 50.650 tons		X
35 loads of pea gravel (Infiltration Trench aggregate) – approximately 1,073.63 tons; all passed jar test. To date, 209 loads received totaling 6,749.93 tons (about 25,000 cubic yards).		X
John Deere 250D Off-Road Haul Truck	X	
Section 1, 2 and 3 of Manhole E		X
Section 1 of Manhole F		X

ACTIVITIES DURING THE WEEK
Excavate and install trench box at Manhole D and Manhole E.
Successfully installed sections 1,2,3 and 4 of Manhole C; sections 1 and 2 of Manhole D; and sections 1 and 2 of Manhole E.
Excavated approximately 302 feet of the Infiltration Trench 5 feet north of Manhole C to 130 feet north of Manhole C, 7 feet north of Manhole D to 105 feet north of Manhole D, and 98 feet south of Manhole D
Backfilled 302 feet of the Infiltration Trench excavated this week with pea gravel (aggregate stone) 5 feet north of Manhole C to 130 feet north of Manhole C, 7 feet north of Manhole D to 105 feet north of Manhole D, and 98 feet south of Manhole D.
Place approximately 302 feet of Geotextile liner over the aggregate stone spanning from 5 feet north of Manhole C to 130 feet north of Manhole C, 7 feet north of Manhole D to 105 feet north of Manhole D, and 98 feet south of Manhole D.
Work saturated soil excavated north and south of Manhole D with fly ash at the soil staging area. After mixing, the soil and fly ash, the soil was transported to Manhole A and Manhole B to be used as backfill. For exact locations concerning the use of fly ash, see below.
Backfill lifts were placed in the following elevations and locations: • Lifts -7', -6' tested at 25' and 20', respectively, north of Manhole B (No fly ash was used) • Lifts -10' and -9' south of Manhole B (No fly ash was used) • Lifts 8" (lift 1), 16" (lift 2), 40" (lift 5) and 48" (lift 6) (up to grade) tested at 10', 15', 5' and 3', respectively, south of Manhole A (Fly ash was used in these lifts) • Lifts 24" (lift 3) and 32" (lift 4) (up to grade) tested at 8' and 12', respectively, north of Manhole A (Fly ash was used in these lifts) • Lift -16" Cell #4, W bank, 10' S of N Bank of the Vertical Flow Wetlands (No fly ash was used; soil came directly from Surface Flow Wetlands) • Lift -8" tested at W bank, Center between cells 4 and 5 of the Vertical Flow Wetlands (No fly ash was used; soil came directly from Surface Flow Wetlands)
Compaction testing was conducted on Monday, October 15, 2007, Wednesday, October 17, 2007, Thursday, October 18, 2007 and Friday, October 19, 2007. For results see the respective Daily Quality Assurance Reports.
Excavate Cell #1 of the Surface Flow Wetlands.
Haul excavated soils from the Surface Flow Wetlands to the berm of the Vertical Flow Wetlands.
Cut Vertical Flow Wetland Cells 2, 4, 6 and 7 according to the stakes placed by Jim Ball.
Grout outlet pipe to section 1 of Manhole E and section 1 of Manhole F.

MEETINGS
H & S Meeting at 7:00 AM ***Monday thru Friday*** • Announce agenda for the day. • Discuss safety concerns and precautions. • Issue permits. • Review JSAs. • Discussion on confined space: definitions, when a permit is required, etc. • Workers are standing to close to the manhole excavation. • Improper lifting consequences – Learned lesson by Compass employee. • Slideshow – Injurious Contact with Heavy Equipment. • Discuss hazardous communication. • Crane collapse movie clip. • Confined space explosion movie clip. • Photo of snake in equipment. • Sever weather watch for Friday.
H & S Meeting at 12:45 PM ***Monday to Thursday****; H & S Luncheon at 12:00 PM* ***Friday*** • No changes to construction activities. • An AED is now on Site. The device is located in the Health and Safety and Security trailer. • Distribute Safe Lifting packet • A safety observation was filed concerning an incident with a haul truck. An excavated pipe was lodged in the tailgate after the soil was dumped in the soil staging area and feel off while driving back to the excavation site. • Observation: overloading of the haul trucks. Saturated material is pouring out of the trucks without

tailgates. • Rebar sticking out of the soil was observed at Manhole D. Use caution when walking in that area.
Weekly Progress Meeting at 1:30 PM • No safety issues • Work performed • Work projected for next week • Schedule – roughly 25 days behind • Open Items • Attendees: SECOR – Ken Hannon and Stephanie Andrews; Compass Environmental – Jerry Resnik and Terry LeMasters; BP/Atlantic Richfield – Joe Sontchi; On-Site – Jerry Palmer • ***For more details see Weekly Progress Meeting Minutes***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
10/15/07 1100	The following concerns were observed along the Infiltration Trench: • *Section of Infiltration Trench north of Manhole F to the SUNY Masonry building and North of Manhole E to the concrete wall*: the upper most lift has a loose layer of soil that has not been compacted. • *Section of the Infiltration Trench north of Manhole G to the South Storm Sewer:* piles of soil were dumped on the upper most lift. When these piles are spread out, that lift will be more than a 12" loose lift (compacted to 8"). Also, the ruts in the upper most layers indicate that the underlying soil was not compacted to the required specifications. • *Section of the Infiltration Trench where the concrete wall* was located: portions of the concrete wall are still visible. In addition, this portion of the trench was backfilled without being compaction tested.
10/15/07 1130	In response to the concerns above, Todd Weaver from Compass clarified: • *Section of Infiltration Trench north of Manhole F to the SUNY Masonry building and North of Manhole E to the concrete wall*: this is the final lift of soil for this portion of the manhole and it will be compacted once the applicable manhole is installed. All underlying layers have passed their respective compaction test. • *Section of the Infiltration Trench where the concrete wall:* this portion of the trench was backfilled in order to serve as a bridge so that the concrete could be removed. This part of the Infiltration Trench has not been tested. The soil will have to be removed and the appropriate number of lifts installed, compacted and tested.
10/15/07 1145	Three compaction tests were conducted within a range of 5 to 20 feet south of Manhole A to roughly -8' below ground surface. The results yielded a compaction of 85%, 83.9% and 80%. The lift was removed and additional fly ash was added to this lift. Todd Weaver and the ATL technician are concerned about the proctor for this soil. A new sample may need to be tested.
10/15/07 1206	Informed by Jennifer Menges that a drawing of the concrete wall was made to illustrate which portions of the wall were to be removed by Compass. The remaining portions of the concrete wall that were observed this morning are the segments indicated on the drawing that did not have to be removed.
10/15/07 1300	Reworked, rolled and compaction tested the first lift north of Manhole A. The test results yielded a compaction of 74.9% and moisture content of 11.9%. The ATL technician took a sample of the soil at Manhole A and from the soil at the stock pile (which contains fly ash) to be re-proctored. Backfilling at Manhole A will cease until a proctor is received – most likely not until Thursday, October 18, 2007.
10/15/07 1415	The proctor being used for the backfill at Manhole A came from the gravel-silt like material (mixed with fly ash) located in the soil staging area. The soil used today – extracted from the banks and berm surrounding Manhole A – contains some clay and is wet.
10/16/07 0745	During the morning Health and Safety meeting, Compass stated that they would be sending a crew to the Surface Flow Wetlands (SFW) to cut and fill. According to the Weekly QA Meeting Minutes from Thursday, October 11, 2007, Compass indicated that no work would continue on the SFW until compaction testing was conducted. To date, compaction testing has not been conducted on the SFW. The RE and QA Official talked to Jerry Resnik and Terry LeMasters regarding the issue. They said that one lift has been put down in the cells already constructed. The crew will only be cutting and rolling today so that when the ATL technician gets here it can be tested right away.
10/16/07 0900	Began excavating inside the trench box at Manhole D. Water was encountered at approximately 12 feet below ground surface. Most of the buckets of material removed were 75% water. The water pouring out of the haul trucks is hitting the ground and flowing back into the manhole causing the east sides of the manhole excavation to erode.

10/17/07 1330	SECOR QA Official reviewed ATL documentation on the compaction testing performed on the lifts at the Vertical Flow Wetlands. SECOR is missing documentation for three of the lifts.
10/18/07 1330	The ATL technician received a proctor for the soil sample that was sent to the lab on Monday, October 15, 2007 to be re-proctored. The proctor for material without fly ash is 116.5 with an optimum moisture content of 11 ± 3%. The proctor received for soil with fly ash is 121 with an optimum moisture content of 9.5 ± 3%.
10/19/07 0725	SECOR QA Official was not notified by Compass QC Official concerning the arrival of the first two truckloads of aggregate stone. (Compass has been reminded on several occasions to notify SECOR's QA Official upon the delivery of the stone.) Every pile of stone in the unloading area was retested due to the uncertainty of the location of the first two loads of stone received today – all tests successfully passed. As a result, all delivers will be stopped at the security trailer until the SECOR QA Official is present to witness the dumping of the delivered stone. In addition, there will be no one deliveries to the north end of the site.
10/19/07 1025	Terry LeMasters received a call from the ATL technician; it is too wet to perform compaction tests. He will return on Monday.
10/19/07 1027	Terry LeMasters informed SECOR QA Officials that peizometers will arrive on November 5, 2007 and will be installed then.

DESIGN CONCERNS AND RESOLUTIONS	
10/17/07	Review Specification Section 02670: Vertical Flow Wetlands. The following spec and drawing details must be observed and documented while constructing the Vertical Flow Wetlands: ▪ External side slope 3:1 ▪ Internal side slope 3:1 ▪ Maximum particle size: 3" ▪ Compaction: 12" loose lifts compacted to 8" (approximately 8 or 9 lifts required) ▪ Bed elevations: 1499.00' ▪ Berm elevation: 1505.5' ▪ Ground surface elevation: 1500.00'

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
10/16/07 1116	Email Terry LeMasters a list of missing reports and pea gravel spreadsheets: • Weekly QA Report from October 11, 2007 • Daily QA Report from October 10, 2007 • Aggregate stone sampling spreadsheet from October 8, 2007 • Aggregate stone sampling spreadsheet from October 15, 2007
10/16/07 1315	Receive missing reports and spreadsheets from Terry LeMasters
10/17/07 0845	Joe Sontchi raised a question about a response from Compass in last week's Weekly Progress Meeting Minutes in regards to an overdue/missing submittal. More specifically: o **02209A – Soil and Sediment Removal / Handling / Placement** *Page 02209A-1 – In the RAWP* ▪ Written procedure describing the methods proposed for excavating and handling soil including movement of excavated material to the on-site materials handling. The procedure written by Compass does not meet the Specifications. A copy of the excavating and hauling procedure from Compass will need to be reviewed.
10/17/07 0850	SECOR QA Official asked Terry LeMasters to provide documentation of the excavating and hauling procedure as described above. Terry will pass this along to Jerry Resnik.
10/18/07 1330	QA Official was informed by Jerry Resnik that Mark Tiley from ACF Environmental was contacted regarding the warranties needed for the Geomembrane liner at the Sedimentation Pond. He will send them to Jerry ASAP.

SUBMITTALS AND OTHER MISC. DOCUMENTS RECEIVED	
10/15/07	BOL for calciment (fly ash) received on October 12, 2007
	ATL testing documentation conducted on October 11, 2007
10/16/07	BOL for 2 loads of calciment (fly ash) – 50.650 tons – received on October 15, 2007

	ATL testing documentation conducted on October 15, 2007
	BOL for 18 loads of pea gravel (Infiltration Trench aggregate) – 535.53 tons – received on October 15, 2007
	Submittal 066: Imported Material – Analytical
	Daily QA Report from October 10, 2007
	Aggregate stone sampling spreadsheet from October 8, 2007
	Aggregate stone sampling spreadsheet from October 15, 2007
	Weekly QA Report from October 11, 2007
	Daily QA Report from October 15, 2007
10/17/07	Daily QA Report for October 16, 2007
10/18/07	Daily QA Report for October 17, 2007
	Weekly QA Report for the week of October 15 - October 18, 2007
	ATL testing documentation for the compaction testing performed on October 17, 2007
	BOL for sections 1, 2, and 3 of Manhole E and section 1 of Manhole F
10/19/07	Daily QA Report for October 18, 2007
	ATL testing documentation for compaction testing performed on October 18, 2007

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

10/24/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

10/24/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, October 25, 2007
1:30 p.m.

SECOR

ATTENDEES		
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*On-Site Technical Services*
Ken Hannon	Jerry Resnik	Jon Brandes
Srinivas Kappagantula	Terry LeMasters	
Stephanie Andrews		

1. Safety

- No safety issues

2. Work Performed

- Continue to install full scale Infiltration Trench
- Continue to haul, fill and compact trench
- Work on Manhole A interiors
- Set and install portions of Manhole F and Manhole G
- Repaired water line at the North end
- Prep Current Controls for restoration
- Various Administrative Items

3. Work Projected (weather dependent)

- Continue installation of full scale Infiltration Trench
- Work on manhole interiors
- Backfill, compact and grade trench areas
- North, Central and South storm sewer repairs
- Hydroseed Current Controls area – conditions permitting
- Work on utility corridor
- Other

4. Schedule (weather dependent)

- 25 + days behind schedule

5. Scope Items

- None

6. Open Items

QC: Compass is reminded that the QC Manager must monitor and document the acceptability of fill material with respect to the specifications.

Pipe fusing: Compass has not yet finished fusing pipe to the Wetlands or Manhole A.

Utility Corridor: Compass has anticipated starting construction on the utility corridor in the upcoming week; however, with the projected drop in temperature, it will be difficult to conduct pressure tests on the pipes due to the temperature restrictions imposed by the testing procedure. If Compass decides to procedure with the construction of the utility corridor, the trench may have to be re-dug in the spring in order to test the pipes according to the piping manufacturer's testing recommendations.

Sedimentation Pond:

Water Balance Testing: Before testing can be conducted, the observation platform and rip-rap need to be constructed/installed. Testing cannot be done when temperatures drop below freezing due to the threat of ice formation.

7. Visitors Anticipated

- None

8. Administrative Issues:

- **REMINDER:**
  - Compass is to review *Specification 01700 – Demobilization*. All submittals, as indicated in the respective specification, must be received prior to demobilization.

- **OVERDUE/MISSING SUBMITTALS**

SPECIFICATION 02209A:
Soil and Sediment Removal/Handling/Placement

- Awaiting a copy of the written procedure describing the methods proposed for excavating and hauling soil. (Talked to Terry of October 17, 2007: Jerry will give SECOR the documentation.)
- Qualifications and permit information for off-site recycling and disposal. (To remove hydraulic contaminated soil from the Site.)
- Contractor is to summarize in writing all equipment and products for soil handling, both procedural and physical. (See Spec 02209A, Section 2.1.)

SPECIFICATION 02210:
Earthworks

- Standard Proctor test results from ATL for soil used as backfill.
- Gradation for all soils used for backfilling.
- Classification for all soils used for backfilling.
- Plasticity Index for all soils used for backfilling.

See Submittal 041 – This type of report is needed for all soils used as backfill.

SPECIFICATION 02661:
Geomembrane Liners

- The Contractor/Installer shall warranty the workmanship on the liner for one year following the date of Geomembrane acceptance.
- Geomembrane Manufacturer shall confirm in writing that the material to be furnished will be free of defects in material and workmanship at the time of sale, and against deterioration due to the effects of ozone, ultraviolet or other normal weathering on a pro-rate basis for 20 years from the date of completed installation.

SPECIFICATION 02680A:
PVC Well Construction

- Details of specific methods to be used to control potential contamination or pollution arising from well installation activities.
- Documentation of product manufacturer for well casings
- Documentation of product manufacturer for well screens

SPECIFICATION 02831A:
Fencing

- Documentation of concrete properties:
  - Minimum 28-day compressive strength of 2,500 psi using at least four stacks of cement per cubic yard.
  - 1" maximum size aggregate.
  - Maximum 3" slump.
  - 2-4% entrained air.

SPECIFICATION 02936:
Finish Grading, Topsoil and Seeding

- Submit data on source, species mixture and germination data on all seed mixes

- Sample of seed mixtures in containers showing:
  - % of seed mix
  - Year of production
  - Net weight
  - Date of packaging
  - Location of packaging

- Analytical testing in accordance with Section 02210. 1.4
- *Fertilizer:* Commercial grade, free flowing, uniform composition and shall conform to applicable State and Federal regulations.
- Submit results of borrow soil testing for topsoil:
  - Gradation (ASTM D 422)
  - Classification (ASTM D 4318)
  - Organic Content (ASTM A 2974)
  - pH
  - Nutrients
  - Lime
  - Fertilizer Recommendations
- Documentation that the following properties of topsoil used in vegetated areas is in accordance with:
  - Classification:
    - 3-20% organic material
    - 3-20% sand
    - 10-70% silt
    - 5-30% clay
  - At least 85% passing a 1/8" sieve
  - pH range: 5.5 to 7.5
  - Color: Munsell color 10YR 3/2, 10YR 3/1 10YR 2/1

SPECIFICATION 03400A:
Precast Concrete Products

- Fabricator qualifications: Firms must have 5 years or more experience in fabrication of precast units similar to units required for this project.
- Inspection and test certificates for each completed unit from the manufacturer.
- Verification that walls can support 60 pcf equivalent fluid weight.
- Verification of reinforcing materials.
- Verification of concrete properties and materials as indicated in the specs.

- Grout properties.
- Grating Manufacturer specs.

SPECIFICATION 05400A:
Aluminum Hatches

- Product data for all materials.
- Samples
- Manufacturer's standard warranty: Materials shall be free of defects in material and workmanship for a period of 25 years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.
- Manufacturer to provide structural calculation stamped by a registered professional engineer.
- Spring tube specs – should be constructed of a reinforced nylon 6/6-base engineered composite material.
- Verification that hatches are secured by an all-weather padlock key to fit a John Deer ignition key.
- Diameter of hinge pin – specs indicate ¼" (6.3 mm).
- Verify that snap lock is stainless steel – not indicated on the drawing.

SPECIFICATION 11285:
Weir and Sluice Gates

- Manufacturer's qualifications: The manufacturer shall have experience in the production of substantially similar equipment, and shall show evidence of satisfactory operations in at least 40 installations. The manufacturer's shop welds, welding procedures and welders shall be qualified and certified in accordance with the requirement of the latest edition of ASME, Section IX.
- Documentations that the manufacturer is ISO 9001 certified.
- Verify if stem cover is in compliance with ASTM A 707.
- Verify if the threaded stem id Type 303 MX or 316.
- Verify that the pedestal, handwheel and crank are alloy ZC81A.

SPECIFICATION 15060A:
Pipe and Fittings (PVC, Steel)

- Product data for all equipment.
- Inspection and test certificates.

SPECIFICATION 15110A:
Valves

SECOR QA Official has not received any submittals under this Specification.

- **SUBMITTAL LOG ISSUES**
  - *Submittal 022: Piezometer Materials and Plan*
    - Need product info on screens and other accessories as shown in the shop drawing
  - *Submittal 063: Dosing Siphons*
    - Verify that Styrofoam insulation will be used around the pipes and top half of the dosing siphon structure as indicated in the drawings.
    - The type of seal to be used around the inlet and outlet pipe is not specified on the drawing.
  - *Submittal 064: 8-Way Splitter Structure*
    - Drawing needs to specify that the "L" bracket has a thickness of 3/16".
- **SUBMITTALS YET TO REVIEW:**
  - *Submittal 035: Decontamination Plan*
  - *Submittal 066: Imported Material - Analytical*

9. Other

Sedimentation Pond:

Water: Compass has repaired the water line at the North end of the Site. Compass will utilize this line for the water balance test at the Sedimentation Pond. Chlorination and a thorough flushing of the system will take place Monday and Tuesday of next week (October 29, 2007 and October 30, 2007).

Rip-rap: Compass has located a supplier for the rip-rap.

Excavation method for working near buildings: The Engineering Package from Mabey Bridge and Shoring, Inc.Page 6 of 8 has been received by SECOR and BP. SECOR has requested a copy of the PE approved drawings from Compass. Mabey Sheet and Shoring is expected to be on-site Monday, October 29, 2007 to begin the installation of the sheet piles.

Excavation of Infiltration Trench along SUNY Masonry building: SUNY has provided Compass with documentation regarded anticipated repairs to the rear wall of the Masonry building.

Current Controls: Due to the amount of rain received earlier this week, the soil is very wet and is not ready to be seeded. Compass will continue to work the soil to remove some of the moisture as well as removing any visible debris and large stones from the finished grade prior to hydroseeding.

Seeding: Compass has subcontracted Allegany Landscape to hydroseed the completed portions of the Infiltration Trench. Dwight Allen from Allegany Landscape has been the Site periodically to check on the condition of the finished grade. He will determine the acceptability of the soil prior to rockhounding and hydroseeding. Specifications from Allegany Landscape regarding the type of seeds, fertilizer, etc., will be provided at a later date.

Manholes: The ladder spanning vertically from Section 1 to Section 2 of Manhole F – installed Wednesday, October 24, 2007 – is 180° apart. Compass has suggested drilling and installing steps in Section 2 to align with Section 1. Sections 1 and 2 of Manhole G – delivered on October 19, 2007 – were received without steps mounted to the interior walls.

Utilities: The survey plan provided by Jim Ball does not identify the locations and inverts of the utility lines located on-site. SECOR has requested that all subsequent survey plans identify all utility lines – including dead lines.

Backfill around the water treatment discharge must be done as soon as possible. Compass will get this done by the end of the day.

Joe Sontchi
Atlantic Richfield
EBM

Date

Srinivas Kappagantula
SECOR Engineering, P.C.
Resident Engineer

11/05/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

10/29/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, October 22, 2007 – Friday, October 26, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
Ball Surveying
LCW / SSS

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
John Jacobus	R & K Trucking
Jeff Gordon	DPW
Brenda Grover	Grover Toilets
Brandon Smith	UPS
Adam Raxner	Vantage Equipment
Kurt Matterson	USPS
Craig Martin	Shorts
Mike Thompson	Shorts
Jay Knapp	Shorts
Richard Forture	NFG
Dan Viuliella	NFG
Dave Slocum	NFG
Roy Cole	Maybee Enterprises
William Byers	Hertz
Josh Mudrick	Larry's Latrines
Ken Barone	Premier National Fuel Gas
Aubrey Williams	Horo Trucking
Jim Brewster	National Trucking

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Section 2 and 4 of Manhole F		X
Section 1 and 2 of Manhole G		X
Concrete cover for Manhole A		X
16 loads of pea gravel (Infiltration Trench aggregate) – approximately 558.54 tons; all passed jar tests		X
Five (5) pallets of Sch 80 pipe		X

ACTIVITIES DURING THE WEEK
Excavated approximately 261 feet of the Infiltration Trench from 99 feet south of Manhole D to 175 feet north of Manhole E; Manhole E to 25 feet south of Manhole E; Manhole F to 25 feet north of Manhole F; Manhole F to 25 feet south of Manhole F; Manhole G to 35 feet north of Manhole G; and, Manhole G to 25 feet south of Manhole G.
Backfilled approximately 261 feet of the Infiltration Trench excavated today with pea gravel (Infiltration Trench stone) from 99 feet south of Manhole D to 175 feet north of Manhole E; Manhole E to 25 feet south of Manhole E; Manhole F to 25 feet north of Manhole F; Manhole F to 25 feet south of Manhole F; Manhole G to 35 feet north of Manhole G; and, Manhole G to 25 feet south of Manhole G.
Place approximately 261 feet of Geotextile liner over the aggregate stone spanning from 99 feet south of Manhole D to 175 feet north of Manhole E; Manhole E to 25 feet south of Manhole E; Manhole F to 25 feet north of Manhole F; Manhole F to 25 feet south of Manhole F; Manhole G to 35 feet north of Manhole G; and, Manhole G to 25 feet

south of Manhole G.
Excavate Manhole F and Manhole G.
Install Sections 1 and 2 of Manhole F and Section 1 and 2 of Manhole G.
Pump groundwater and remove accumulated gravel and silt from the interior of Manhole A.
Install guide rails in Manhole A and begin to install guide rails in Manhole B.
Install the concrete cover at Manhole A.
Haul dry soil excavated approximately 10 feet below ground surface (bgs), south of Manhole D to Manhole A and Manhole B to be used as backfill.
Transport the pile of fly ash located approximately 200 feet southwest of Manhole A to Manhole G.
Repair water line located approximately 200 feet north of Manhole A.
Assemble the interior components of the manholes – submersible pumps, effluent pipes and guide rail system (first tier).
Decontamination of the Hertz John Deer 250D off-road haul truck.
Backfill lifts were placed in the following elevations and locations: • Lifts +80 and +88" tested at 6' and 9', respectively, north of Manhole A. (Fly ash was used.) • Lifts +96", +112" and +120" tested at 10', 5' and 10' north of Manhole A. (No fly ash was used.) • Lifts +56", +64" and +72" tested at 15', 8' and 10', respectively, south of Manhole A. (Fly ash was used.) • Lifts +104" and 128" tested at 9' and 20', respectively, south of Manhole A. (No fly ash was used.) • Lifts +32" and +48" tested at 25' and 12', respectively, north of Manhole B. (Fly ash was used.) • Lifts +64" and +88" tested at 15' and 5', respectively, north of Manhole B. (No fly ash was used.) • Lifts +24", 40" and +56" tested at 12', 15' and 30', respectively, south of Manhole B. (Fly ash was used.) • Lifts +72" +80" and +96" tested at 10', 6' and 5', respectively, south of Manhole B. (No fly ash was used.) • Lifts +8", +16", +24", +32", +40", +48", +56", +64", +72", +80", +88", +96" and +104" tested at 5', 10', 15', 22', 25', 33', 38', 40', 8', 13', 30', 18' and 22', respectively, north of Manhole C. (No fly ash was used.) • Lift +40" tested at the west bank of Cell #4, 15' south of the north bank of the Vertical Flow Wetlands. (No fly ash was used.)

MEETINGS
*H & S Meeting at 7:00 AM **Monday thru Friday*** • Announce agenda for the day. • Discuss safety concerns and precautions. • Issue permits. • Review JSAs. • Article regarding railroad death. • Discussion regarding fire extinguisher types and situations in which they are to be used. • Discuss bloodborne pathogens. • Discuss hypothermia. • Safety observation: Confined space air reading exceeded the maximum limit. Also, Compass workers were observed on the rim of Manhole A without harnesses and life lines. Stop work authority should have been exercised. • Reminder to workers that everyone is expected to sign out at the end of each work day. • Equipment operators are to use caution and workers near the manholes are required to wear the proper PPE.
*H & S Meeting at 12:45 PM **Monday to Thursday**; H & S Luncheon at 12:00 PM **Friday*** • No changes to construction activities. • Use caution when walking near of in the path of haul trucks. • Fuel cell PPE is now located in the job trailer. • Distribute Portland back injury email from Joe Sontchi.
*Weekly Progress Meeting at 1:30 PM on **Thursday*** • No safety issues • Work performed • Work projected for next week • Schedule – roughly 25 days behind • Open Items • Attendees: SECOR Engineering, P.C.– Ken Hannon, Srinivas Kappagantula, and Stephanie Andrews; Compass Environmental, Inc. – Jerry Resnik and Terry LeMasters; On-Site Technical Services, Inc. – Jon Brandes

- ***For more details see Weekly Progress Meeting Minutes for October 25, 2007***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
10/22/07 1030	Manhole A has not been properly covered and fenced off and posses a hazard while backfilling around it. Jerry Resnik indicated that a berm will be placed around the manhole so that the roller does not have to be close to the uncovered manhole. The berm will then be compacted once the manhole cover is installed. Until the manhole cover is received, Compass will place temporary fencing over and around the manhole, similar to Manhole H.
10/22/07 1530	A large concrete slab was encountered while digging the 6th run – 189 feet south of Manhole D. The concrete slab was removed and placed on the west bank of the Infiltration Trench.
10/22/07 1615	Another large concrete slab was encountered while excavating the top five feet of the Infiltration Trench 193' north of Manhole E. It was removed and placed on the west bank of the trench.
10/23/07 0700	Heavy rain prevented Compass from trenching, backfilling and compaction testing of the Infiltration Trench.
10/24/07 1050	While pumping groundwater from Manhole A, a substantial amount of gravel and silt was encountered. The gravel and silt continuously clogged the pump making it difficult to remove the groundwater.
10/25/07 1600	Silt fence to be repaired northeast of Manhole C by the power pole and southeast of Manhole D where the pea gravel (Infiltration Stone aggregate) is located.
10/26/07 0800	While backfilling around Manhole B, a large amount of pea gravel (Infiltration Trench aggregate) was dumped into the interior of the manhole. It took Compass approximately five to six hours to remove all the stone from the bottom of Manhole B. By the end of the day, Compass had the bottom tier of the guide rails mounted and drilled in place.
10/26/07 0915	The trench box was not used for the stretch of the Infiltration Trench where the gas line is located.
10/26/07 1600	Additional blocks from the previously impacted rear brick wall of the SUNY Masonry building fell off during lunch (This wall was previously impacted during trenching activities on October 1, 2007 around 1200.) Caution tape was placed around the deteriorating portion of the wall and surrounding trench area "KEEP OUT" was spray painted on the exterior walls of the building.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
10/25/07	Terry LeMasters was notified regarding missing BOLs for the first three loads of pea gravel received on Friday.
10/24/07 1800	Terry LeMasters was informed regarding the following: • *Missing liner documentation:* o The Contractor/Installer shall warranty the workmanship on the liner for one year following the date of Geomembrane acceptance. o Geomembrane Manufacturer shall confirm in writing that the material to be furnished will be free of defects in material and workmanship at the time of sale, and against deterioration due to the effects of ozone, ultraviolet or other normal weathering on a pro-rate basis for 20 years from the date of completed installation. • *Missing Vertical Flow Wetlands lifts*, more specifically, Lift #5 (+ 40" up from grade). Terry LeMasters and Jerry Resnik are aware of the overdue documentation required for the Geomembrane liner. Terry will talk to the ATL technician and get the necessary documentation for the missing lift tomorrow (October 25, 2007).
10/24/07 1800	SECORs QA Official provided Terry LeMasters with a list of submittals needed for seeding (Specification 02936 – Finish Grading, Topsoil and Seeding) which will be done at the end of this month. Both Terry and Jerry Resnik stated that Joe Sontchi approved a change to the mix requirements for the seed mixture. Compass is no longer required to provide a 60/40 ratio of wildflower and native warm season grass, respectively, at the north end of the Site. This change does not affect the seed mixture requirements in other areas of the Site.

10/25/07 1315	Terry LeMasters received a list of overdue/missing submittals (updated on October 25, 2007)

SUBMITTALS AND OTHER MISC. DOCUMENTS RECEIVED	
10/22/07	Daily QA Report for October 19, 2007
	ATL testing documentation for compaction testing performed on October 19, 2007
	ATL testing documentation for compaction testing performed on September 19, 2007. (This is the missing documentation that Compass was to provide to SECOR regarding the Vertical Flow Wetland missing lifts.)
	BOL for pea gravel (Infiltration Trench aggregate) received on October 19, 2007.
	Map of the Infiltration Trench denoting survey locations via Jim Ball.
10/23/07	ATL testing documentation for compaction testing performed on October 22, 2007
10/24/07	Daily QA Report for October 22, 2007
	Daily QA Report for October 23, 2007
	Pea gravel (Infiltration Trench aggregate) spreadsheet for sampling conducted on October 19, 2007.
	Pea gravel (Infiltration Trench aggregate) spreadsheet for sampling conducted on October 23, 2007.
10/25/07	*Submittal 044* (should be 045): Pipe Testing Plan

Srinivas Kappagantula
SECOR Engineering, P.C
Resident Engineer

11/21/2007
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

11/21/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, November 1, 2007
1:30 p.m. – 1:45 p.m.

SECOR

ATTENDEES		
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*On-Site Technical Services*
Ken Hannon (via conference call)	Jerry Resnik	Jerry Palmer
Stuart Klaus	Terry LeMasters	
Stephanie Andrews		

1. Safety

- No safety issues

2. Work Performed

- Install sheet pile and full scale Infiltration Trench
- Continue to haul, fill and compact trench
- Work on Manhole B, C, D, F and G interiors
- Rip-rap Sedimentation pond and install post – Projected work for Friday, November 2, 2007
- Various Administrative Items

3. Work Projected

- Continue installation sheet pile and full scale Infiltration Trench
- Work on manhole interiors
- SUNY Masonry building footer
- Backfill, compact and grade trench areas
- Fill Sedimentation Pond in preparation of water balance test
- North, Central and South storm sewer repairs

4. Projected Work for the Final Week

- Decontamination
- Clean up
- Fencing
- Catch up

5. Schedule (weather dependent)

- 25 + days behind schedule
- (+11 behind for 2007 work to 2008)

6. Scope Items

- None

7. Open Items

- None

8. Visitors Anticipated

- None

9. Administrative Issues:

- **OVERDUE/MISSING SUBMITTALS**

SPECIFICATION 02210:
Earthworks

- Standard Proctor test results from ATL for soil used as backfill.
- Gradation for all soils used for backfilling.
- Classification for all soils used for backfilling.
- Plasticity Index for all soils used for backfilling.

See Submittal 041 – This type of report is needed for all soils used as backfill.

SPECIFICATION 02661:
Geomembrane Liners

- Geomembrane Manufacturer shall confirm in writing that the material to be furnished will be free of defects in material and workmanship at the time of sale, and against deterioration due to the effects of ozone, ultraviolet or other normal weathering on a pro-rate basis for 20 years from the date of completed installation.

SPECIFICATION 02680A:
PVC Well Construction

- Details of specific methods to be used to control potential contamination or pollution arising from well installation activities.
- Documentation of product manufacturer for well casings
- Documentation of product manufacturer for well screens

SPECIFICATION 02936:
Finish Grading, Topsoil and Seeding

- Sample of seed mixtures in containers showing:
  - % of seed mix
  - Year of production
  - Net weight
  - Date of packaging
  - Location of packaging

SPECIFICATION 03400A:
Precast Concrete Products

- Fabricator qualifications: Firms must have 5 years or more experience in fabrication of precast units similar to units required for this project.
- Inspection and test certificates for each completed unit from the manufacturer.
- Verification that walls can support 60 pcf equivalent fluid weight.
- Grout properties.

SPECIFICATION 05400A:
Aluminum Hatches

- Product data for all materials.
- Manufacturer's standard warranty: Materials shall be free of defects in material and workmanship for a period of 25 years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.
- Manufacturer to provide structural calculation stamped by a registered professional engineer.
- Spring tube specs – should be constructed of a reinforced nylon 6/6-base engineered composite material.
- Verification that hatches are secured by an all-weather padlock key to fit a John Deer ignition key.
- Diameter of hinge pin – specs indicate ¼" (6.3 mm).
- Verify that snap lock is stainless steel – not indicated on the drawing.

SPECIFICATION 15060A:
Pipe and Fittings (PVC, Steel)

- Product data for all equipment.
- Inspection and test certificates.

SPECIFICATION 15110A:
Valves

SECOR QA Official has yet to review the documents submitted today.

- **SUBMITTAL LOG ISSUES**
  - *Submittal 022: Piezometer Materials and Plan*
    - Need product info on screens and other accessories as shown in the shop drawing
  - *Submittal 063: Dosing Siphons*
    - Verify that Styrofoam insulation will be used around the pipes and top half of the dosing siphon structure as indicated in the drawings.
    - The type of seal to be used around the inlet and outlet pipe is not specified on the drawing.
  - *Submittal 064: 8-Way Splitter Structure*
    - Drawing needs to specify that the "L" bracket has a thickness of 3/16".

- **SUBMITTALS YET TO REVIEW:**
  - *Submittal 008A : Valves*
  - *Submittal 008A-Plastic: Plastic Valves*

10. Other

Current Controls: Jerry Palmer met with the owners of Current Controls. They are please with the progress and condition of the grade. There are still odds and ends (chunks of concrete, etc.) that Compass will address before demobilization.

Pipe fusing: Compass has decided to suspend pipe fusing and pipe testing until spring 2008. All pipe ends will be capped prior to demobilization.

Piezometers will be installed by a licensed driller – Nature's Way – on Monday, November 5, 2007.

Seeding: Allegany Landscape will be on-site Friday, November 2, 2007 to hydroseed north of Manhole B.

Compaction testing:

- *Vertical Flow Wetlands:* All the required documentation for the Vertical Flow Wetlands has been received.

- *Surface Flow Wetland:* Compaction testing has not been conducted to-date on the Surface Flow Wetlands. One lift has been placed; however, this lift is greater than the required 12" loose lift (compacted to 8"). This lift will be shaved and re-compacted. If time allows, testing will be conducted on this lift.

- *Infiltration Trench:* Documentation for Manholes A, B, C, and D indicate that all required lifts have been tested.

Sedimentation Pond:

- *Water:* The Sedimentation Pond is set to be filled on Monday, November 5, 2007.

- *Rip-rap:* Before the rip-rap can be placed around the Sedimentation Pond, Geotextile fabric must be laid on top of the liner. Currently Compass only has one roll of Geotextile left from the Infiltration Trench. An additional two rolls are set to arrive on-site today. After the Geotextile is place, the rip-rap can be added.

- *Water Balance Test:* Compass is aware that they are to supply the materials to conduct the Water Balance Test. Compass intends to complete the water balance test by the demobilization date.

Excavation of Infiltration Trench along SUNY Masonry building: SUNY will provide Compass a list of materials preferred for the reconstruction of the Masonry building and Compass will supply these materials to the College. Compass is required to inform SUNY regarding the progress of the footer.

Joe Sontchi
Atlantic Richfield
EBM

Date

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

11/7/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

11/07/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

FORMER SINCLAIR REFINERY-OU2
WELLSVILLE, NY
BP/Atlantic Richfield

Date: November 1, 2007

1. Work Performed:

   Excavate around gas line

   Excavating trench to tie in manhole E

   Plumbing manhole B, C, D, and F

   Installing shoring for Suny building

   Various Administrative

2. Construction situations/deficiencies/defects:

   None

3. Summary of tests results:

   Several tests for compaction at the wetlands, and trench. (Results submitted)

4. Signature of contractor:

WEEKLY QA REPORT

Former Sinclair Refinery
Wellsville, New York
Monday, October 29, 2007 – Friday, November 2, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
Ball Surveying
LCW / SSS

VISITORS	
Name	***Company***
Tim Cleary	Atlantic Testing
Rick Newhard	Mabee Trucking
Brenda Grover	Grover Toilets
Mike Petusino	Horo Trucking
Brandon Smith	UPS
John Hardy	Vantage Equipment
Kurt Matteson	USPS
Joe Schench	Mabey Bridge and Shore, Inc.
Jay Knapp	Shorts
Corbin Short	Shorts
Mike Thompson	Shorts
Kevin Glaser	NYSDEC
Frank Shaffer	Lukehart Trucking
Jeff Hitchcock	Howgen
Fred Williams	Howgen
Greg Nickerson	Howgen
John Payne	Howgen
Bill Tidd	Howgen
Ron Groux	Howgen
Dave Heater	Hertz
William Byers	Hertz
Lee Cozzort	Harlan Electric
Kevin Hart	Harlan Electric
Andy Conney	Sunny Hill Enterprises
Chris Preischel	Preischel Bro.
Josh Mudrick	Larry Latrines
Doug Hunt	Allegany Landscape
Daryl Hunt	Allegany Landscape
Daniel Hunt	Allegany Landscape
Ronald Grelser	Allegany Landscape

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Sheet pile materials and driver		X
Section 3 of Manhole F		X
Section 3 of Manhole G		X
Twenty-five (25) steps		X
Seven (7) manhole covers		X
Eleven (11) loads of rip-rap – approximately 243.16 tons		X
Three (3) loads of pea gravel (Infiltration Trench aggregate) – approximately		X

107.89 tons; all passed jar test		
Hertz John Deere 250D Off-Road Haul Truck	X	

ACTIVITIES DURING THE WEEK
Install guide rails in Manhole B, Manhole C, Manhole D, Manhole F and Manhole G.
Pump out Manholes C, D and E.
Install Sections 3 and 4 of Manhole E, Section 4 of Manhole F, and Section 4 of Manhole H.
Trenched north of Manhole E under the central storm sewer, backfilled with gravel and initial soil lift. This reportedly finished the trenching and backfilling (except the two building areas that must use the sheet piling).
Grade area north of treatment plant building fencing. Removed some of the soft wet rockier soils and replaced with dryer soils with less rock; however, rocks still exist in surface soils.
Prep fly ash and soil at Manhole G to be used as backfill.
Continue to excavate Surface Flow Wetlands. Soil excavated from this area is being used as backfill at Manhole F and Manhole G.
Backfill lifts were placed in the following elevations and locations: • Four feet below ground surface, tested at 105 feet south of Manhole C (along the SUNY heavy equipment building). (Fly ash was used.) • Lifts +8", +16", +24", +32", +40", +48", +56", +64", +72", +80" and +88" tested at 65', 135', 58', 92', 129', 70', 150', 54', 98', 163' and 25', respectively, south of Manhole G. (No flyash was used.) • Lifts +8", +12", +40", and 64" tested at 12', 8', 6', and 7', respectively, north of Manhole E. (No flyash was used.) • Lifts +24", +32", +48", and 72" tested at 4', 6', 10', and 5', respectively, south of Manhole E. (No flyash was used.) • Lifts +24", +32" and +48" tested at 5', 3' and 2', respectively, north of Manhole G. (Fly ash was used.) • Lifts +8", +16" and +40", tested at 2', 3' and 5', respectively, south of Manhole G. (Flyash was used.) • Lifts +56" and +80" tested at 6' and 2', respectively, north of Manhole G. (No flyash was used.) • Lifts +64" and +72" tested at 4' and 3', respectively, south of Manhole G. (No flyash was used.) • Lifts +56", +72", and +96" tested at 6', 3' and 4', respectively, north of Manhole F. (No flyash was used.) • Lifts +64", +80" and +88" tested at 5', 7' and 12', respectively, south of Manhole F. (No flyash was used.)
Installed Sheet Pile Driver on Caterpillar Excavator 330C.
Install the western sheet pile wall along the SUNY heavy equipment building. This western wall will be held to prevent any movement of the SUNY building.
Installation of the eastern sheet pile wall next to the SUNY heavy equipment building (approximately seven feet east of the western sheet pile wall.) The eastern sheet pile wall is being installed in approximately 20 foot sections to allow the excavator to set at the end of this wall and dig the trench at a slight angle.
Assemble bracing prior to being places within the sheet pile walls during excavation. As excavation proceeds bracing is installed at 4' and 12' depths between the sheet piling. The braces are large steel beams (whalers) pressed against the sheet piling by heavy metal expandable screw jacks (JC Struts).
Excavated approximately 60 feet of the Infiltration Trench 100 feet south of Manhole C to the south end of the SUNY heavy equipment building.
Backfilled approximately 60 feet of the Infiltration Trench excavated today with pea gravel (aggregate stone) 100 feet south of Manhole C to the south end of the SUNY heavy equipment building.
Place approximately 60 feet of Geotextile liner over the aggregate stone spanning 100 feet south of Manhole C to the south end of the SUNY heavy equipment building.
Removed eastern sheet pile wall from the portion of the Infiltration Trench at the SUNY heavy equipment building, excavated on Wednesday, October 31, 2007.
Mulch and hydroseed area 200 feet north of Manhole A to Manhole B. The amount of rocks present in the surface soils is not acceptable for a final grade. This area will need to be revisited in the spring to be rockhounded, compacted and raked.
Repair North and South Storm Sewer lines located approximately 100 feet north of Manhole D and approximately 120 feet south of Manhole F, respectively.
Decon Volvo A35D Off-road haul truck

MEETINGS
H & S Meeting at 7:00 AM ***Monday thru Friday*** • Announce agenda for the day. • Discuss safety concerns and precautions.

- Issue permits.
- Review JSAs.
- Frost precautions.
- Reminder to all workers to keep their safety glasses on at all times.
- Beware of black ice in the morning while driving to the Site.
- Use caution when driving or walking on wet surfaces.

H & S Meeting at 12:45 PM ***Monday to Thursday****; H & S Luncheon at 12:00 PM* ***Friday***

- No changes to construction activities.
- Review shoring procedures.
- Driving reminders handout.
- Weekend vehicle driving safety.

Weekly Progress Meeting at 1:30 PM

- No safety issues
- Work performed
- Work projected for next week
- Schedule – roughly 25 days behind
- Open Items
- Attendees: SECOR Engineering, P.C.– Ken Hannon (via conference call), Stuart Klaus, and Stephanie Andrews; Compass Environmental, Inc. – Jerry Resnik and Terry LeMasters; On-Site Technical Services, Inc. – Jerry Palmer
- ***For more details see Weekly Progress Meeting Minutes for November 1, 2007***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
10/30/07 1600	Groundwater was pumped out of Manhole E yesterday, October 29, 2007; however, groundwater has infiltrated into the manhole up to Section 2 (as observed today). The manhole will need to be re-pumped in order to install the guide rails.
10/31/07 1530	Guide rails were not installed in Manhole E due to significant leakage along the lower manhole ring.
10/31/07 1730	The sheet piling was placed too far apart (approximately four feet) for the supplied expandable screw jack braces (JC Struts). The extra JC Struts will be utilized along with longer bolts to allow the bracing to expand tightly against the sheet piling walls.

DESIGN CONCERNS AND RESOLUTIONS	
	NONE

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
10/29/07 1155	SECOR QA Official spoke with Terry LeMasters regarding the Pipe Testing Plan submittals. The dates on *Submittal 044: Pipe Testing Plan* and *Submittal 055: Revised Pipe Testing Plan* are out of sequence – September 13, 2007 and September 17, 2007, respectively. Also, the copy received on Thursday from Jerry Resnik, the cover page for Submittal 044 and the Revised Pipe Testing Plan do not coincide with Submittal 044's description. Terry will look into this after lunch.
10/30/07 1550	SECOR QA Official informed Terry LeMasters that all the required submittals for Specification 11285: Weir and Sluice Gates have been received.
10/30/07 1730	Compass has not yet submitted information on the rip-rap to be placed at the sedimentation pond (anticipated delivery date: October 30, 2007).

SUBMITTALS AND OTHER MISC. DOCUMENTS RECEIVED	
10/29/07	BOL for the delivery of Sections 2 and 4 of Manhole F and Sections 1 and 2 of Manhole G
	BOL for five pallets of ACH 80 piping via National Pipe and Plastic, Inc.
	ATL testing documentation for compaction testing conducted on October 25, 2007
	ATL testing documentation for compaction testing conducted on October 26, 2007
	BOL for pea gravel (Infiltration Trench aggregate) received on October 23, 2007
	Daily QA Report for October 24, 2007
	Daily QA Report for October 25, 2007
10/30/07	Daily QA Report for October 26, 2007
	Daily QA Report for October 29, 2007
	Weir & Sluice Gate submittals (as indicated on the overdue/missing submittal list given to Terry

	LeMasters last Thursday, October 25, 2007)
	Submittal 067: Soil Excv/Haul Proc and Summ
	ATL documentation for compaction testing performed on October 29, 2007
	ATL documentation for compaction testing performed on October 30, 2007
	BOL for Section 3 of Manhole F, Section 3 of Manhole G and 25 steps for Manhole
	BOL for seven manhole covers
	BOL for delivery of Items 7 and 8
	BOL for Mabey shoring equipment received on October 29, 2007
10/31/07	Daily QC Report for October 30, 2007
11/01/07	Weekly QA Report for 10/29 to 11/01
	Sampling spreadsheet for pea gravel (Infiltration Trench aggregate) received on October 31, 2007
	BOL for pea gravel (Infiltration Trench aggregate) received on October 31, 2007
	BOL for rip-rap received on October 31, 2007
	BOL for rip-rap received today
	Submittal 008A – Valves
	Submittal 008Plastic – Plastic Valves
	Submittal 068 – Seed and Fertilizer – Current Controls area
	Submittal 069 – Disposal Facility Permit
	Submittal 070 – Aluminum Hatch Sample
	Submittal 071 – Fencing Concrete Properties
	Compass liner acceptance letter
11/02/07	*Submittal 072:* Liner Installation Warranty
	Daily QC Report for October 31, 2007
	Daily QC Report for November 1, 2007
	ATL documentation for compaction testing performed on November 1, 2007

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

11/8/07
Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

11/08/2007
Date

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WEEKLY PROGRESS MEETING MINUTES

Former Sinclair Refinery
Wellsville, New York
Thursday, November 8, 2007
1:35 p.m. – 2:00 p.m.

SECOR

ATTENDEES		
SECOR Engineering P.C.	*Compass Environmental, Inc.*	*On-Site Technical Services*
Ken Hannon	Jerry Resnik	Jerry Palmer
Stuart Klaus		Jon Brandes
Stephanie Andrews		

1. Safety

- No safety issues

2. Work Performed

- Complete full scale Infiltration Trench
- North and South storm sewer repairs
- Placed rip-rap and put water in the Sedimentation Pond
- Work on Manhole H interior
- Installed piezometers (should be complete by Friday, November 9, 2007)
- Deconned equip and general clean up
- Masonry building footer construction
- Various Administrative Items

3. Work Projected

- Fence and gates
- Decon and clean up
- Miscellaneous
- Demobe

4. Schedule

- 25 + days behind schedule
- (+24 behind for 2007 work to 2008)

5. Scope Items

- None

6. Open Items

- None

7. Visitors Anticipated

- None

8. Administrative Issues:

- **OVERDUE/MISSING SUBMITTALS**

SPECIFICATION 02210:
Earthworks

- Standard Proctor test results from ATL for soil used as backfill.
- Gradation for all soils used for backfilling.
- Classification for all soils used for backfilling.
- Plasticity Index for all soils used for backfilling.

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Geomembrane Liners

- Geomembrane Manufacturer shall confirm in writing that the material to be furnished will be free of defects in material and workmanship at the time of sale, and against deterioration due to the effects of ozone, ultraviolet or other normal weathering on a pro-rate basis for 20 years from the date of completed installation.

SPECIFICATION 02680A:
PVC Well Construction

- Details of specific methods to be used to control potential contamination or pollution arising from well installation activities.
- Documentation of product manufacturer for well casings
- Documentation of product manufacturer for well screens

SPECIFICATION 02936:
Finish Grading, Topsoil and Seeding

- Sample of seed mixtures in containers showing:
  - % of seed mix
  - Year of production
  - Net weight
  - Date of packaging
  - Location of packaging

SPECIFICATION 03400A:
Precast Concrete Products

- Fabricator qualifications: Firms must have 5 years or more experience in fabrication of precast units similar to units required for this project.
- Inspection and test certificates for each completed unit from the manufacturer.
- Verification that walls can support 60 pcf equivalent fluid weight.
- Grout properties.

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Aluminum Hatches

- Product data for all materials.
- Manufacturer's standard warranty: Materials shall be free of defects in material and workmanship for a period of 25 years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.
- Manufacturer to provide structural calculation stamped by a registered professional engineer.
- Spring tube specs – should be constructed of a reinforced nylon 6/6-base engineered composite material.
- Verification that hatches are secured by an all-weather padlock key to fit a John Deer ignition key.
- Diameter of hinge pin – specs indicate ¼" (6.3 mm).
- Verify that snap lock is stainless steel – not indicated on the drawing.

SPECIFICATION 15060A:
Pipe and Fittings (PVC, Steel)

- Product data for all equipment.
- Inspection and test certificates.
-

- **SUBMITTAL LOG ISSUES**
  - *Submittal 022: Piezometer Materials and Plan*
    - Need product info on screens and other accessories as shown in the shop drawing
  - *Submittal 063: Dosing Siphons*
    - Verify that Styrofoam insulation will be used around the pipes and top half of the dosing siphon structure as indicated in the drawings.
    - The type of seal to be used around the inlet and outlet pipe is not specified on the drawing.

- *Submittal 064: 8-Way Splitter Structure*
  - Drawing needs to specify that the "L" bracket has a thickness of 3/16".

9. Other

Rental equipment: Compass has contacted the appropriate rental companies and conveyed that all equipment must be picked up by Tuesday, November 13, 2007.

Security personnel will not be required to be on Site after Tuesday, November 13, 2007. For the remainder of the week, the gate will be kept closed during the day and the last person to leave the Site at night will lock the gate.

Fencing: Temporary fencing will be placed over the course of the upcoming week. Jerry Palmer and Jerry Resnik have walked the perimeter with the fencing subcontractor and are aware of where the fencing is to be installed. An additional 10 to 15 feet of temporary fencing will be placed around Manhole B for safety precautions.

Rockhounding: The area seeded on Friday, November 2, 2007 (200 feet north of Manhole A to Manhole B) will need to be rockhounded in the spring to remove the rocks in the surface soils; the soil was too moist to rockhound this year. The soil was seeded as a stabilization effort and not intended to be fully restored to the requirements of the Specification.

Manholes: Guide rails have not been installed in Manhole E or Manhole H. Manhole E has water infiltrating through the joint between Section 1 and Section 2. Groundwater is infiltrating through the grouting at the corrugated outlet piping extending to the south of Manhole H. Compass plans to install the guide rails and address the aforementioned manholes in the spring.

Manhole steps: Twenty-five (25) manhole steps were received on October 30, 2007. These steps will be stored on-site over the winter and installed in the appropriate manholes in the spring.

Pumps: All sixteen (16) submersible pumps are on-site and housed in the red machinery building. Prior to demobilization, all pumps will be moved to the smaller red building near Manhole H and will be installed in the spring.

Flow controllers and other temperature sensitive equipment will be moved to the North Treatment Plant for the course of the winter.

Electric: Reed and Culbert will store materials in the red car barn until construction commences in the spring.

Pipe fusing: Compass will cap all pipe ends and pipes damaged along the Infiltration Trench prior to demobilization.

Water balance test: Set-up is complete for the water balance test. Testing will commence later today or Friday, November 9, 2007, and last for one week.

Sedimentation Pond: Compass is required to formulate a course of action that will deter winter weather from potentially damaging the Geomembrane liner. Compass was reminded that a successful test must be completed and all submittals received/accepted prior to Atlantic Richfield Company issuing final acceptance.

As-built drawings: Compass will provide SECOR with a hard copy and an electronic copy of as-built drawings via Jim Ball.

Excavation of Infiltration Trench along SUNY Masonry building: SUNY has provided Compass with a list of requested materials for the restoration of the rear brick wall of the Masonry building. The Heavy Equipment Department has requested to backfill the footer. Compass will transport pea gravel (Infiltration Trench aggregate) to the Masonry building for the college to use. Compass must remove the loose blocks between the windows prior to demobilization. Compass will have the requested materials delivered to the building area.

Compaction at the SUNY Masonry building: The Infiltration Trench spanning the SUNY Masonry building was not compacted to the requirements of the Specification because the roller could not fill in between the sheet piles. The trench was compacted using the bucket of the Cat 345 C excavator. This area will need to be revisited in the spring.

A **site walk** will be conducted on Monday, November 12, 2007 at 1:30 P.M. to review items/tasks that need to be completed prior to demobilization for the season.

Joe Sontchi
Atlantic Richfield
EBM

Date

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

Date

Stephanie L. Andrews

11/09/2007

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

FORMER SINCLAIR REFINERY-OU2
WELLSVILLE, NY
BP/Atlantic Richfield

Date: November 7, 2007

1. Work Performed:

   Installed shoring behind Suny and masonry buildings

   Excavating trench behind Suny and masonry buildings

   Plumbing manhole G

   Deconing equipment and shoring equipment

   Various Administrative

2. Construction situations/deficiencies/defects:

   None

3. Summary of tests results:

   Several tests for compaction at the wetlands, and trench. (Results submitted)

4. Signature of contractor:

WEEKLY QA REPORT
Former Sinclair Refinery
Wellsville, New York
Monday, November 5, 2007 – Friday, November 9, 2007

SECOR

PARTIES ON SITE
SECOR Engineering, P.C.
Compass Environmental Inc.
On-Site Technical Services, Inc.
Ball Surveying
LCW / SSS

VISITORS	
Name	***Company***
Dan Meehan	UPS
Brandon Smith	UPS
Bruce Cady	Shorts
David Campbell	M&T Trucking
Robert Lucciano	Osmo
William Meck	Osmo
Rodger Fanton	Fanton's Clay
Kevin Glaser	NYSDEC
Dan Sheu	Sheu's Septic
Mike Saeli	Nature's Way
Mike Schehardt	Nature's Way
Kyle Savage	Nature's Way
Chris Mucha	DeTech
Bob Brosky	Horo Trucking
Aubrey Williams	Horo Trucking
Robert Jennings	Horo Trucking
Jody Forster	Godwin Pumps
Robert Speera	Mendon Trucking
Tom Dell	Howgen
Sean Mudrick	Larry's Latrines
Kurt Matteson	USPS
Ron Mohn	Nason's Delivery
Noem Braun	Pariso, Inc.
Mike Schamber	Pariso, Inc.
Nordan Allard	Fassett Lane
Dennis Warnox	Fassett Lane

EQUIPMENT / MATERIALS		
Item	*Removed from Site*	*Received*
Cat 345 C excavator	X	
Sheet pile materials and driver	X	
Roller	X	
Two (2) truckloads of crushed gravel		X
Fencing materials		X
Water hoses (courtesy of Wellsville's Fire Department)	X	
Concrete blocks and other materials for the repair of the SUNY Masonry building		X

ACTIVITIES DURING THE WEEK
Removed vegetation along haul road. While clearing the haul road on September 12, 2007, trees and other debris leaning on the abandoned barrel house were removed and shifted to the east side of the trail among other

vegetation. These trees/debris were marked with orange dots and removed.
Remove eastern sheet pile wall at the SUNY heavy equipment building and transport to the SUNY Masonry building.
Backfill approximately 60 feet of the Infiltration Trench along the SUNY heavy equipment building.
Installation of the western and eastern sheet pile wall (approximately 30 feet, each) next to the SUNY Masonry building (about 30 feet south of Manhole E). The western wall will be held to prevent any movement of the SUNY building. The eastern sheet pile wall, driven approximately seven feet from the western sheet pile wall, will serve as a barrier for the bracing spanning from the western sheet pile wall to the eastern sheet pile wall.
Excavated to a depth of approximately 18 feet along the 30-foot span of the SUNY Masonry building that was not completed due to the collapse of the rear brick wall on October 1, 2007. See the Daily QA Report for October 1, 2007 for more information.
Backfill approximately 30 feet of the Infiltration Trench with pea gravel (aggregate stone) along the 30-foot span of the SUNY Masonry building (approximately 30 feet south of Manhole E to 60 feet south of Manhole E).
Place approximately 30 feet of Geotextile liner over the aggregate stone spanning along the 30-foot span of the SUNY Masonry building (approximately 30 feet south of Manhole E to 60 feet south of Manhole E).
Remove the 30-foot eastern sheet pile wall and 30-foot western sheet pile wall along the SUNY Masonry building.
Excavate, form and pour concrete footer along the SUNY Masonry building.
Continue to backfill, compact and grade the soil over the South Storm Sewer line (roughly 36" diameter) located approximately 120 feet south of Manhole F.
Compact and grade the soil over the North Storm Sewer line (roughly 36" diameter) located approximately 100 feet north of Manhole D.
Place rip-rap on the banks of the Sedimentation Pond. (For a detailed panel layout, see *Submittal 074*: Landsaver Liner Doc.)
Fill Sedimentation Pond with two feet of water. The water was pumped from the fire hydrant located adjacent to the red barn to the Sedimentation Pond via water hoses supplied by Wellsville's Fire Department.
Install water balance testing apparatus in northeast corner of the Sedimentation Pond.
Conduct water balance test at the Sedimentation Pond.
Remove sandbags from the bottom of the Sedimentation Pond.
Decontamination of two Volvo A25D Off-road haul truck, Cat 345 C excavator, roller and frac tank, sheet pile materials, Cat 330 L excavator, 250 D off-road haul truck, 700H dozer, 230 excavator, and water hoses (property of Wellsville's Fire Department).
Install nine (9) piezometers, PZ-1 thru PZ-9. (See Design Concerns and Resolutions below for locations.)
Form and pour concrete piezometer surface blocks.
Place manhole cover G and manhole cover H.
Crushed stone was placed over the pea gravel initially paced on the Current Controls driveway.
Recover and repair wells located behind Current Controls. (See Site/Construction Concerns and Resolutions below.)
Install temporary orange fencing along the utility trench.
Move equipment and materials to the small red barn located near Manhole H.

MEETINGS
H & S Meeting at 7:00 AM ***Monday thru Friday*** • Announce agenda for the day. • Discuss safety concerns and precautions. • Issue permits. • Review JSAs. • Review stop work authority and safety partner program. • *Reminder that anyone entering the Sedimentation Pond is entering a confined space and must wear a PFD when 10 feet within the waterline.*
H & S Meeting at 12:45 PM ***Monday to Thursday****; H & S Luncheon at 12:00 PM* ***Friday*** • No changes to construction activities. • 'Care for your back' handout. • "Burned by Cement' article. • Operators are not to run over the water hoses running from the fire hydrant adjacent to the red barn to the Sedimentation Pond. • Movie clip of confined space deaths.
Weekly Progress Meeting at 1:35 PM on ***Thursday*** • No safety issues

- Work performed
- Work projected for next week
- Schedule – roughly 25 days behind
- Open Items
- Attendees: SECOR Engineering, P.C.– Ken Hannon, Stuart Klaus, and Stephanie Andrews; Compass Environmental, Inc. – Jerry Resnik; On-Site Technical Services, Inc. – Jerry Palmer and Jon Brandes
- ***For more details see Weekly Progress Meeting Minutes for November 8, 2007***

SITE / CONSTRUCTION CONCERNS AND RESOLUTIONS	
11/05/07 1055	Groundwater has been pumped out of Manhole H; however, additional groundwater is infiltrating through the grouting at the corrugated outlet piping extending to the south of Manhole H.
11/05/07 1630	Thunder and lightening at the south end of the Site shut down construction for the day.
11/06/07 1600	In order for the water balance testing apparatus to be placed in the Sedimentation Pond, rip-rap was not placed on Geomembrane panel number 24 (P#24). (For a detailed panel layout, see *Submittal 074*: Landsaver Liner Doc.)
11/07/07 1300	Piezometer 2 (PZ-2) was skipped due to the close proximity of the haul road.
11/08/07 0900	While backfilling and grading the soil behind Current Controls on October 31, 2007, (from Manhole A to approximately 200 feet south of Manhole A) two wells were covered and inaccessible. Compass removed the backfill and repaired the wells as requested by Scott Watson (On-Site).
11/09/07 1415	Piezometer 5 (PZ-5), as well as the 3-4-foot survey stake, spray painted orange and marked with an orange flag, used to mark the well location, could not be located – the top of the surface protector was all that was found. Compass searched for the well and could not find it. Compass contacted Nature's Way and they will be on-site Monday, November 12, 2007 to re-drill the well.

DESIGN CONCERNS AND RESOLUTIONS	
11/05/07 1700	SECOR RE identified where piezometers are to be located. Ball Surveying was on-site to stake out the designated locations.
11/06/07-11/08/07 1500	Piezometers were installed at the following locations, in conjunction with drawings C-11A: ➢ *PZ-9:* Station 31+00 (100 feet north of Manhole A) to a depth of 18 feet 8 inches. ➢ *PZ-8:* Station 28+00 (halfway between Manhole A and Manhole B) to a depth of 20 feet 1 inch. ➢ *PZ-7:* Station 24+00 (halfway between Manhole B and Manhole C) to a depth of 19 feet 1 inch. ➢ PZ-6: Station 20+00 (halfway between Manhole C and Manhole D) to a depth of approximately 20 feet 4 inches. ➢ PZ-5: Station 16+00 (halfway between Manhole D and Manhole E) to a depth of approximately 17 feet 9 inches. ➢ PZ-4: Station 12+00 (halfway between Manhole E and Manhole F) to a depth of approximately 19 feet 9 inches. ➢ PZ-3: Station 8+00 (halfway between Manhole F and Manhole G) to a depth of approximately 20.0 feet. ➢ PZ-2: Station 4+00 (halfway between Manhole G and Manhole H) to a depth of approximately 18 feet 4 inches. ➢ PZ-1: Station 1+00 (100 feet south of Manhole H) to a depth of approximately 15 feet 7 inches.

SUBMITTAL AND OTHER MISC. DOCUMENT CONCERNS AND RESOLUTIONS	
11/06/07 0840	SECOR QA Official gave Terry LeMasters a list of submittals received by SECOR that are missing cover sheets.
11/06/07 1300	Received cover sheets from Jerry Resnik in reference to the list as mentioned above.
11/07/07 1000	SECOR QA Official asked Terry LeMasters for any BOLs and/or other shipment tickets for materials arrived/shipped off site.
11/08/07 1300	SECOR QA Official spoke to Terry LeMasters in regards to the ATL soil testing documentation that was submitted on November 7, 2007. There are some discrepancies that need to be clarified.

SUBMITTALS AND OTHER MISC. DOCUMENTS RECEIVED	
11/05/07	Daily Report for November 2, 2007
	ATL testing documentation for compaction testing performed on November 2, 2007
11/06/07	Daily Report for November 5, 2007
	Cover sheet for *Submittal 073:* Manhole A-G Detail
	Cover sheet for *Submittal 074:* Landsaver Liner Doc
	Cover sheet for *Submittal 075:* Manhole Box Cert
	Cover sheet for *Submittal 076:* Fontaine-Corp Cert
	Cover sheet for *Submittal 077:* Sed Liner – Resin and Carbon Black
	Cover sheet for *Submittal 078:* Engineering Package
	Cover sheet for *Submittal 079:* Fontaine – ISO 9001
	Cover sheet for *Submittal 080:* Fontaine – Material Compliance
	Cover sheet for *Submittal 081:* Fontaine – Mfg. Quals
	Cover sheet for *Submittal 082:* Compass Liner Acceptance
	Cover sheet for *Submittal 083:* Disposal Docs
11/07/07	Daily QC Report for November 6, 2007
	Submittal Register (Submittals 001 thru 083)
	Weekly QC Report for November 5, 2007 to November 8, 2007
	ATL soils report from October 9, 2007 to November 1, 2007
11/08/07	Daily QC Report for November 7, 2007

Stuart Klaus
SECOR Engineering, P.C.
Resident Engineer

Date

Stephanie L. Andrews
SECOR Engineering, P.C.
QA Official

11/26/2007
Date

Any party in attendance may rebut any discrepancies in the meeting minutes by submitting said discrepancies to the QA official in writing within on (1) week of receipt of the meeting minutes.

Appendix C – Submittals

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappaganula skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/17/2007

WE ARE SENDING YOU

[X]	Specifications	[ ]	Plans	[ ]	Invoice
[ ]	Drawings	[ ]	Reports	[ ]	Information/Data
[ ]	Qualifications	[ ]	Samples	[ ]	Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
001	2115-Part	Silt Fence Fabric & Posts	7/17/2007						

[X] For Review & Approval [ ] For Your Use

REMARKS:

Copies To: Mike Valis
File

From: Jerry Resnik
Senior Project Manager

Assurene Silt Fences

ASR-8100

ASR-8100 is a polypropylene circular woven fabric. This engineered geotextile is stabilized to resist degradation due to ultraviolet exposure. It is resistant to commonly encountered soil chemicals, mildew and insects, and is non-biodegradable. Polypropylene is stable with a pH range of 2 to 13, making it one of the most stable polymers available for geotextiles today. We wish to advise that **ASR-8100** meets the AASHTO M-288 specification for silt fence material with the following minimum average roll values:

Property	Test Method	Minimum Average Roll Value (English)	Minimum Average Roll Value (Metric)
Grab Tensile	ASTM-D-4632	125 x 125lb	0.550x 0.550 kN
Grab Elongation	ASTM-D-4632	15% x 20%	15% x 20%
Mullen Burst	ASTM-D-3786	300 psi	2067 kPa
Puncture	ASTM-D-4833	65 lb	0.289 kN
Trapezoidal Tear	ASTM-D-4533	65 lb	0.289 kN
UV Resistance @ 500 hours	ASTM-D-4355	80 %	80 %
AOS(1)	ASTM-D-4751	30 sieve	0.600 mm
Permittivity	ASTM-D-4491	0.05 sec^{-1}	0.05 sec^{-1}
Flow Rate	ASTM-D-4491	10 $gal/min/ft^2$	407 $L/min/m^2$

(1) max. average roll values

Assurene Corp manufacturers the circular woven fabric indicated above. The values listed are a result of testing conducted in on-site laboratories. A letter certifying the minimum average roll values will be issued from the manufacturing plant by the Quality Control Manager at the time shipment is made.

Assurene Corp
19444 De Havilland Drive, Suite B
Saratoga, Ca 95070
PH: 408-621-4113
FX: 408-255-3325

The facts stated and the recommendations made herein are offered free of charge and are accurate to the best of our knowledge. Assurene Corp assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. Assurene disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, material, or information furnished herewith. Final determination of the use of any information or material, or how it is used, and whether the use infringes any patents is sole responsibility of the user.

ACF Environmental
2831 Cardwell Road
Richmond, VA 23234
Sales: 1-800-448-3636
Corporate: 1-800-223-9021
Fax: 1-804-271-3074
www.acfenvironmental.com
W. PA. Warehouse, Zelienople, PA

Product #303600351, Preassembled ACF Silt Fence

Posts—Nominal 2"x 2" Hardwood stakes, 42" Length
On 8' centers (13 posts per Roll)

Fabric—Assurene ASR-8100, 36" width

Fabric is attached to posts using 1" wide galvanized steel staples.

Finished Roll Length is 100'

COMPASS ENVIRONMENTAL INC.

LETTER OF TRANSMITTAL

TO : Mr. Ken Hannon, khannon@secor.com
Srinivas, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/17/2007

WE ARE SENDING YOU

[X]	Specifications	[ ]	Plans	[ ]	Invoice
[ ]	Drawings	[ ]	Reports	[ ]	Information/Data
[ ]	Qualifications	[ ]	Samples	[ ]	Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
002	02115, Sec 2.5	Decon Pad Liner	7/17/2007						

[X] For Review & Approval [ ] For Your Use

REMARKS:

Copies To: **Mike Valls**
File

From: Jerry Resnik
Senior Project Manager

SOLMAX INTERNATIONAL

2101, Blvd Marie-Victorin, Varennes (Quebec) Canada, J3X 1P7 • Tel.: 1-450-929-1234 • Fax.: 1-450-929-2547 • www.solmax.com

TECHNICAL DATA SHEET

Geomembrane LLDPE Textured DS (3)

PROPERTY	TEST METHOD	FREQUENCY (1)	UNIT Imperial	Solmax 860T-3002
Thickness (min. avg.)	ASTM D-5199	Every roll	mils	60.0
Thickness (min.)			mils	54
Asperity Height (ave.)	GRI-GM-12	Every roll	mils	10
Resin Density	ASTM D-1505	1/Batch	g/cc	< 0.926
Melt Index - Cond. E (max.)	ASTM D-1238	1/Batch	g/10 min.	1.0
Sheet Density	ASTM D-1505	Every 2 rolls	g/cc	< 0.939
Carbon Black Content	ASTM D-4218	Every 2 rolls	%	>2.0 / <3.0
Carbon Black Dispersion	ASTM D-5596	Every 6 rolls	Category	Cat. 1 & Cat. 2
Oxidation Induction Time (min.)	ASTM D-3895	1/Batch	min.	100
Tensile Properties (min.) (2)	ASTM D-6693	Every 2 rolls		
Strength at Break			ppi	108
Elongation at Break			%	200
Tear Resistance	ASTM D-1004	Every 6 rolls	lbs	33
Puncture Resistance ASTM	ASTM D-4833	Every 6 rolls	lbs	84
Dimensional Stability	ASTM D-1204	Every 6 rolls	%	± 2
Multi-Axial Tensile	ASTM D-5617	Per formulation	%	30
Oven Aging	ASTM D-5721	Per formulation	%	35
UV Resistance	GRI-GM-11	Per formulation	%	35
SUPPLY SPECIFICATIONS *(Roll dimensions may vary ±1%)*				
Roll Dimension - Width			ft	22.0
Roll Dimension - Length			ft	520
Area (Surface/Roll)			sf	11,700

NOTES

1. Testing frequency based on standard roll dimensions and one batch is approximately 180,000 lbs (or one railcar).
2. Machine Direction (MD) and Cross Machine Direction (XMD or TD) average values should be on the basis of 5 specimens each direction.
3. Of 10 readings; 8 out of 10 must be >7 mils (0.18 mm), and lowest individual reading must be >5 mils (0.13 mm).

* All values are nominal test results, except when specified as minimum or maximum.
* The information contained herein is provided for reference purposes only and is not intended as a warranty of guarantee. Final determination of suitability for use contemplated is the sole responsability of the user. SOLMAX assumes no liability in connection with the use of this information.

COMPASS ENVIRONMENTAL INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/17/2007 Revised 7/26

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y____ N X

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved		Approved as Noted	Approval/Date	Resubmittal #
003	02210A	Trench Geotextile	7/17/2007					

[ ] For Review & Approval [ ] For Your Use [X]

Deviations:

REMARKS/NOTES

From: Jerry Resnik
Senior Project Manager

Copies To: Mike Valls
File

PRODUCT DATA SHEET

GEOTEX® 601

GEOTEX 601 is a polypropylene, staple fiber, needlepunched nonwoven geotextile produced by Propex, and will meet the following Minimum Average Roll Values (MARV) when tested in accordance with the methods listed below. The fibers are needled to form a stable network that retains dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

GEOTEX 601 conforms to the property values listed below.[1] Propex performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute - Laboratory Accreditation Program (GAI-LAP).

PROPERTY	TEST METHOD	MARV[2] ENGLISH	MARV[2] METRIC
Mechanical			
Tensile Strength (Grab)	ASTM D-4632	160 lbs	712 N
Elongation	ASTM D-4632	50%	50%
Puncture	ASTM D-4833	85 lbs	378 N
CBR Puncture	ASTM D-6241	410 lbs	1824 N
Mullen Burst	ASTM D-3786	280 psi	1930 kPa
Trapezoidal Tear	ASTM D-4533	60 lbs	267 N
Endurance			
UV Resistance	ASTM D-4355	70%	70%
Hydraulic			
Apparent Opening Size (AOS)[3]	ASTM D-4751	70 US Std. Sieve	0.212 mm
Permittivity	ASTM D-4491	1.30 sec^{-1}	1.30 sec^{-1}
Water Flow Rate	ASTM D-4491	110 gpm/ft^2	4480 $l/min/m^2$
Roll Sizes		12.5 ft x 360 ft 15 ft x 300 ft	3.81 m x 109.8 m 4.57 m x 91.5 m

NOTES:

1. The property values listed above are effective 08/2006 and are subject to change without notice.
2. Values shown are in weaker principal direction. Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.
3. Maximum average roll value.

PROPEX | THE ADVANTAGE CREATORS.™
GEOSYNTHETICS

Propex Inc.
6025 Lee Highway, Suite 425
PO Box 22788
Chattanooga, TN 37422

PH: 423 899 0444
PH: 800 621 1273
FAX: 423 899 7619
www.geotextile.com

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COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

O: Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/18/2007

WE ARE SENDING YOU

	Specifications		Plans		Invoice
X	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
004	03400A-P1.4/DWG C12A	Pre-Cast Manhole	7/18/2007						

X For Review & Approval For Your Use

REMARKS:

Copies To: Mike Vails
File

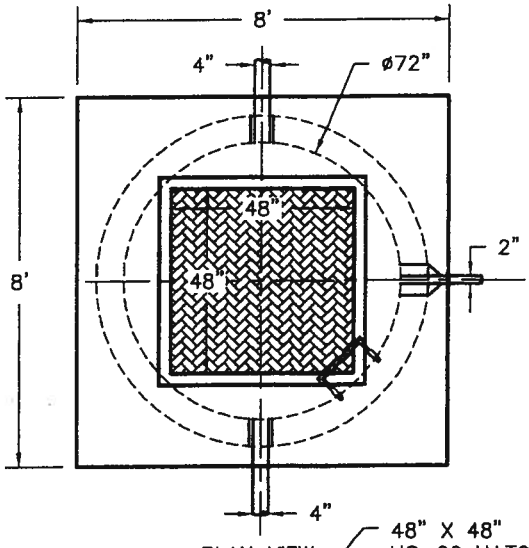
From: Jerry Resnik
Senior Project Manager

MANHOLES PRODUCED PER ASTM C-478

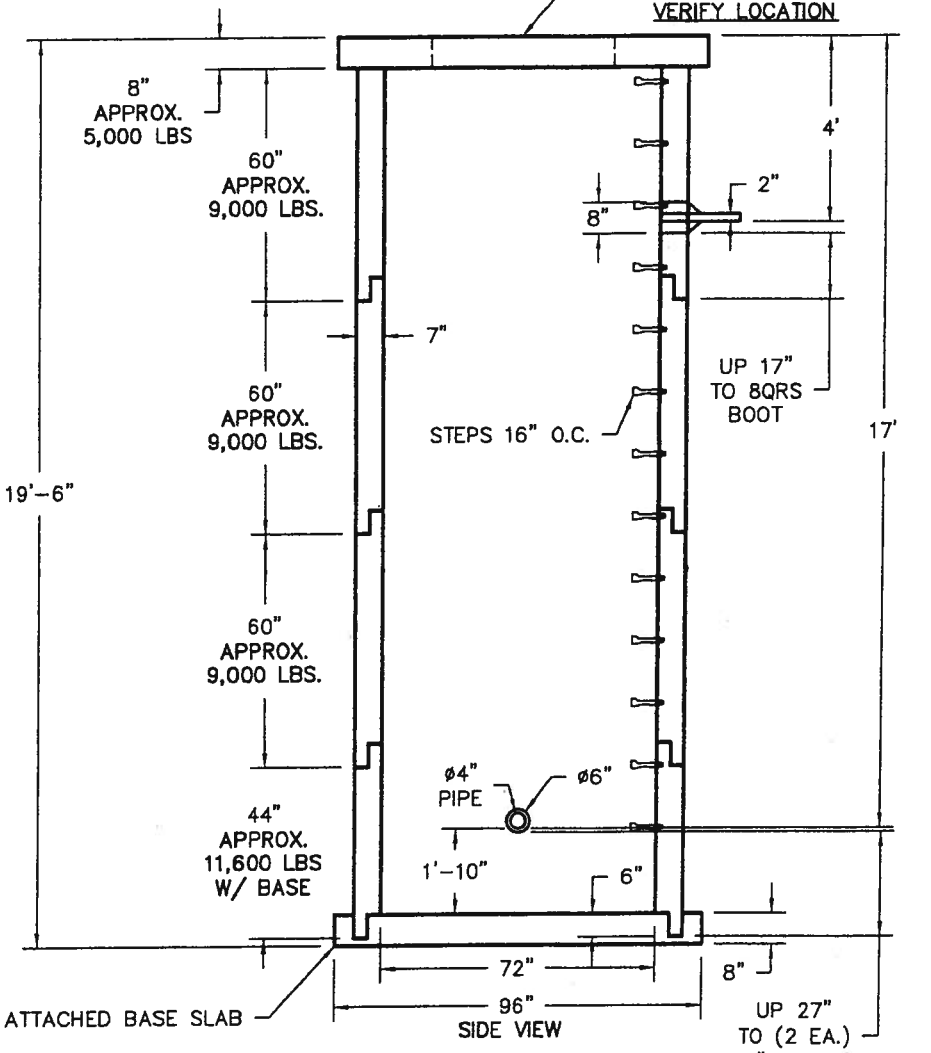
- [x] PIPE GASKET (BOOT)
- [ ] O-RINGS
- [x] BUTYL RUBBER
- [ ] JOINT WRAP
- [ ] POUR INVERTS
- [x] NO INVERTS
- [x] STEPS
- [ ] ADJUSTING RINGS

SHIPPING LIST

1 – 8' X 8' TOP SLAB W/ ACCESS HATCH
1 – 60" FLAT TOP BARREL
2 – 60" BARRELS
1 – 44" BARREL W/ ATTACHED BASE SLAB
1 – 8QRS BOOT



PLAN VIEW



SIDE VIEW

NOTES:
HATCH SUPPLIED BY OTHERS

EXTERIOR BITUMINOUS MASTIC COATING

(8 EA.) – IMH MANHOLES "A" THRU "H"

SHEET NO. 0 OF 0

COMPASS ENVIRONMENTAL
BP REFINERY
WELLSVILLE, NY
JERRY RESNIK, 419-427-2633

WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800-325-8456

SCALE:1/4" = 1'	REV NO.	DATE:
DRAWN BY:SWT		
DATE: 7/17/07		
FILE: custom boxes 2007\Compass Environmental Wellsville, NY BP refinery		

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/18/2007

WE ARE SENDING YOU

	Specifications		Plans		Invoice
X	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
005	03400A-P1.4/DWG C12A	Pre-Cast Meter Box	7/18/2007						

X For Review & Approval

For Your Use

REMARKS:

Copies To: Mike Valls
File

From: Jerry Resnik
Senior Project Manager

(1 EA.) METER BOX

NOTES:

TOP SLAB – APPROX. 3,700 LBS.
BOX SECTION – APPROX. 13,800 LBS.

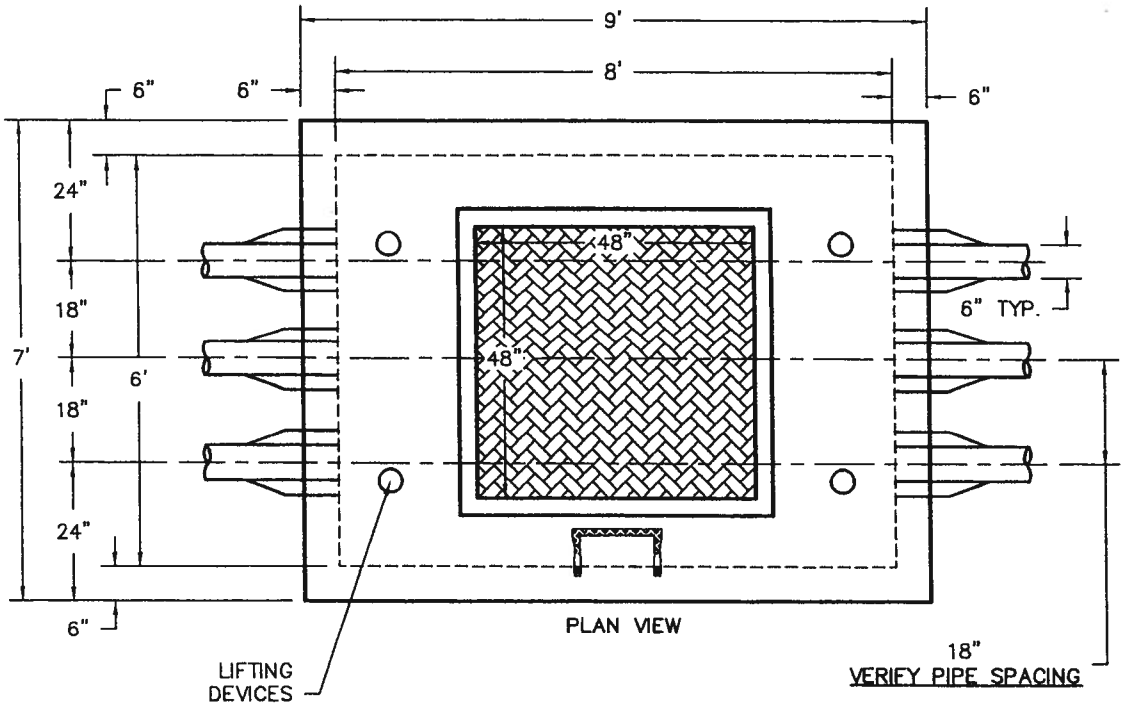
CONCRETE
- 28 DAY COMPRESSIVE F'C=5000 PSI.
- AIR ENTRAINED

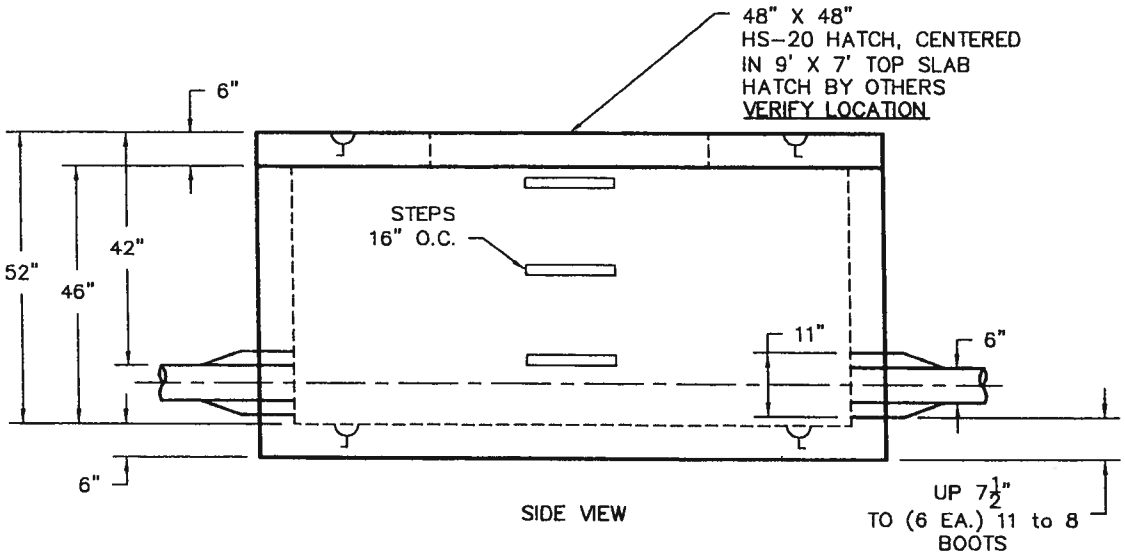
REBAR
- ASTM A-615 GRADE 60.

DESIGN LOADS
- H-20 WHEEL LOAD W/30% IMPACT PER AASHTO
- 120 PCF SOIL DENSITY
- 60 PCF EQUIVALENT FLUID PRESSURE

HATCH SUPPLIED BY OTHERS

EXTERIOR BITUMINOUS MASTIC COATING





REV NO.	DATE:

SCALE: 3/8" = 1'
DRAWN BY: SWT
DATE: 7/17/07
FILE: custom boxes 2007\Compass Environmental Wellsville, NY BP refinery

WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800-325-8456

COMPASS ENVIRONMENTAL
BP REFINERY
WELLSVILLE, NY
JERRY RESNIK, 419-427-2633

SHEET NO.
0 OF 0

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

O : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/18/2007

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
X	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
006	11285,P1.6(A)/Dwg C17	Weir Gate	7/18/2007						

X For Review & Approval For Your Use

REMARKS:

Copies To: Mike Valls
File

From: Jerry Resnik
Senior Project Manager

Fontaine

SERIES 40
DOWNWARD-OPENING WEIR GATES

Can be supplied in a multitude of shapes
The self adjusting sealing system allows precise flow measurement
Low-maintenance

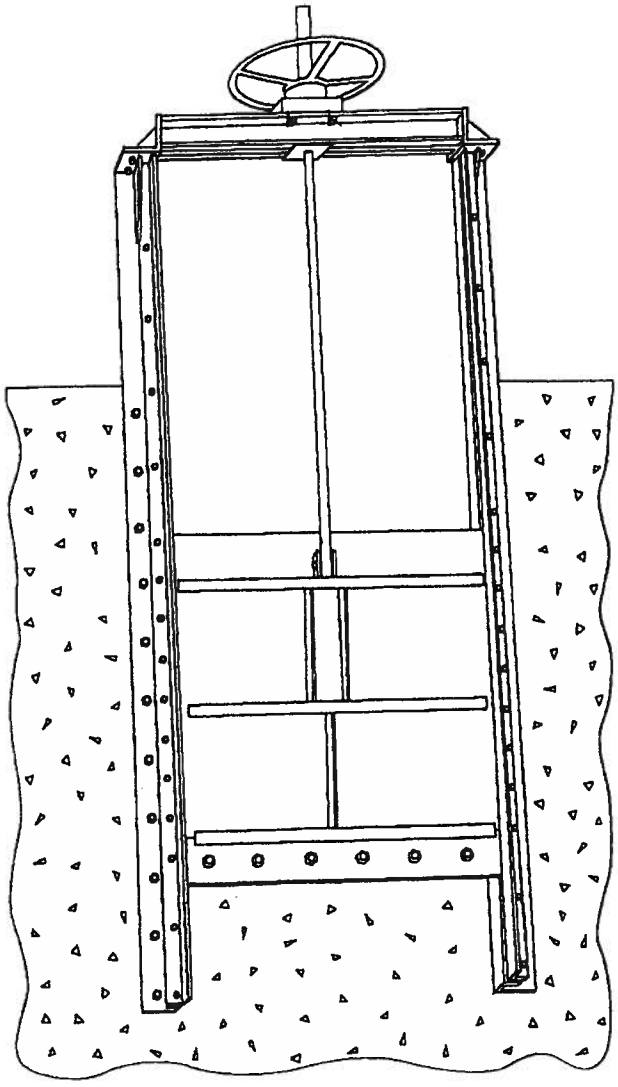
***

General Description

The Fontaine SERIES 40 weir gate is used to control flows in different applications by opening downwards and allowing water flow over the stainless steel plate. The SERIES 40 sealing system design is similar to that of the SERIES 20.

Stainless Steel Construction

Because of its stainless steel construction, the SERIES 40 has high corrosion and erosion resistance, and can be operated many years with a minimum maintenance. Stainless steel allows the weir to be fabricated in a multitude of shapes to measure precise flows. The most common shapes used for measuring flows are the rectangular weir, the 90 degree V-notch weir, the Cipoletti weir, and the Sutro weir.



AWWA Standards

SERIES 40 gates are built to meet or exceed AWWA C513 standards pertaining to the design safety factors, stem and stem couplings, stem guides positioning, manual lifting devices, and leakage. As specified in the AWWA standard, all Fontaine SERIES 40 weir gates are tested for operation before shipping.

Fontaine

SERIES 40
DOWNWARD-OPENING WEIR GATES

No.	Part	Material
1	Frame	Stainless steel ASTM A-240 Type 304L or 316L
2	Guides, side seals	Ultra high molecular weight polyethylene (UHMWPE) ASTM D-4020
3	Compression cord	Nitrile ASTM D-2000 M6BG 708, A14, B14, E014, E034
5	Slide	Stainless steel ASTM A-240 Type 304L or 316L
6	Bottom seal	Ultra high molecular weight polyethylene (UHMWPE) ASTM D-4020

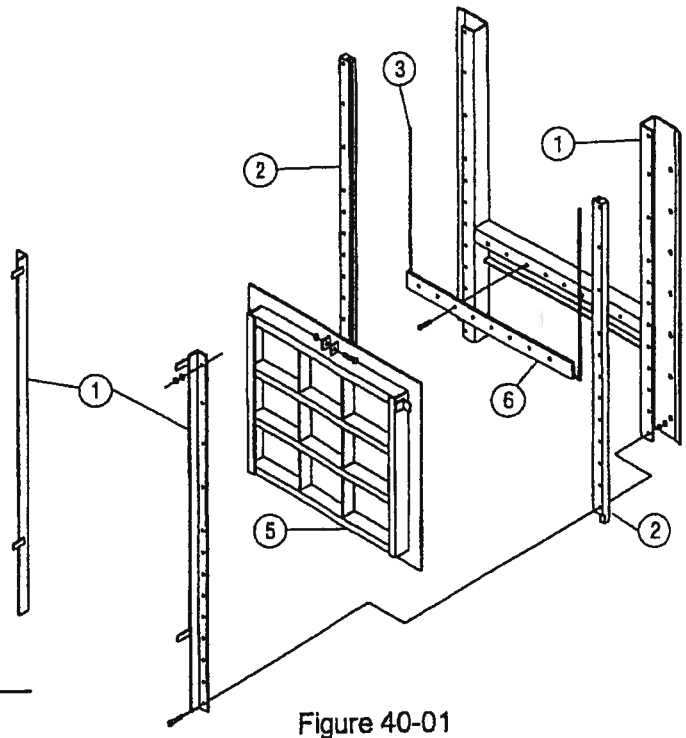
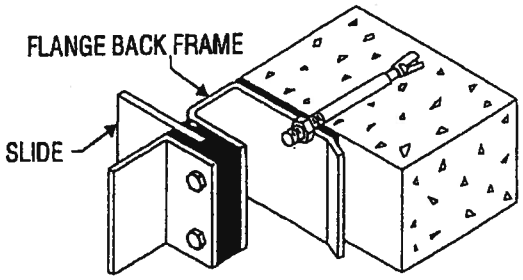


Figure 40-01
Exploded view of a Series 40

Flange Back Frame

The stainless steel frame on the SERIES 40 is a flange back type (Detail 40-01) available in open or self-contained configurations, providing a solid one-piece gate. The rigidity provided by the frame makes it easier to handle in transportation and installation, with less risk of distortion. The flange can be modified in order for the gate to be installed on many applications.



Detail 40-01
Flange back frame

Reinforced Slide

The slide consists of a stainless steel plate reinforced with horizontal members welded to the plate, making it a solid one-piece slide. It can be fabricated in various shapes to control and calculate the flow of water.

UHMWPE Seals (U.S. and Canadian Patents)

The side and bottom seals (Detail 40-02, 03) are the same as on the SERIES 20, allowing no metal-to-metal contact. They are made of a self-lubricating ultra high molecular weight polyethylene (UHMWPE). With a friction coefficient of less than 0.2, the seals make the gate easier to operate even after a long period of inactivity. The self-adjusting quality is obtained by a continuous compression cord which guarantees a perfectly watertight seal between the slide and the frame in both seating and unseating conditions. The bottom seal (Detail 40-03) is a UHMWPE piece with continuous compression cord, allowing contact between the slide and seal at all times.

Mountings

Figure 40-02 shows the most common Series 40 mounting (for more mounting details, refer to "Mountings" in the "Introduction" section).

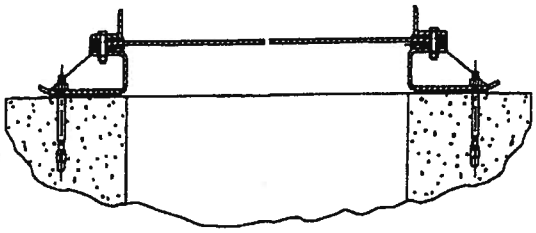
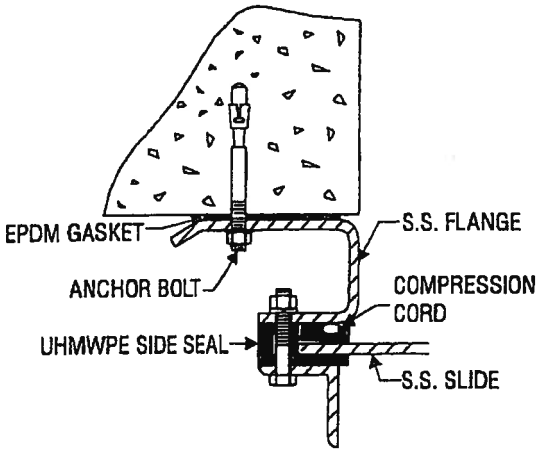
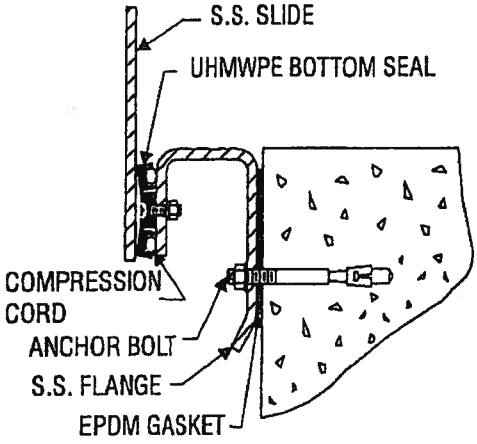


Figure 40-02
Directly on a concrete wall
(CW)



Detail 40-02
Section "A-A" of the side frame



Detail 40-03
Section "B-B" of the bottom frame

(Details 40-02, 03 refer to figures 40-08 , 09, 10, 11 on pages 5, 6, 7 and 8)

Frame and Stem Configurations

Figures 40-07 through 40-10 show the most common frame and stem configurations.

Model 404

Concrete wall mounted (CW) with pedestal-mounted gear box and crank operator (MNEP) Rising stem (RS1)

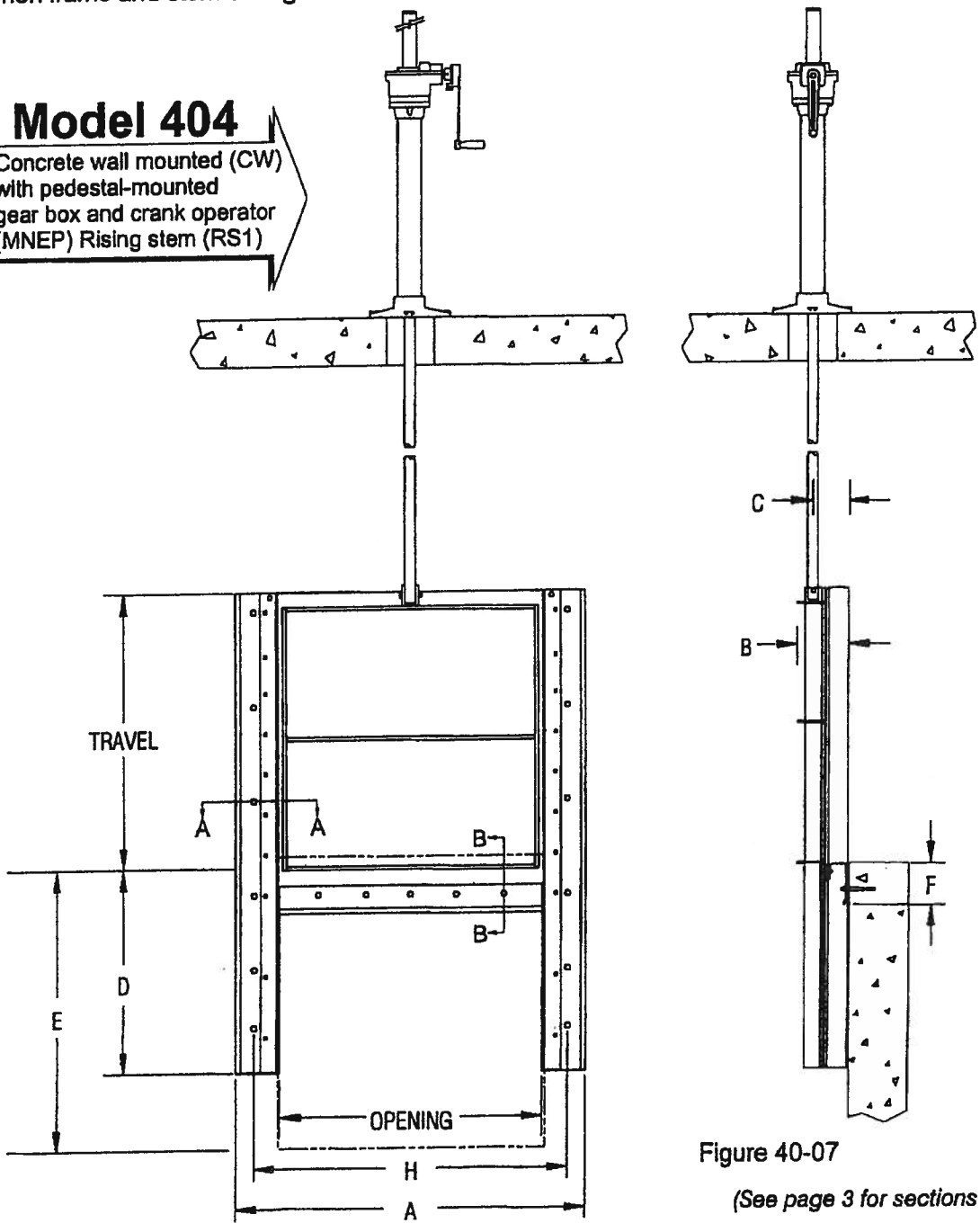


Figure 40-07

(See page 3 for sections A, B)

Frame and Stem Configurations

Model 403

Concrete wall-mounted (CW)
with yoke-mounted
gearbox and crank (MNE)
Rising stem (RS2)

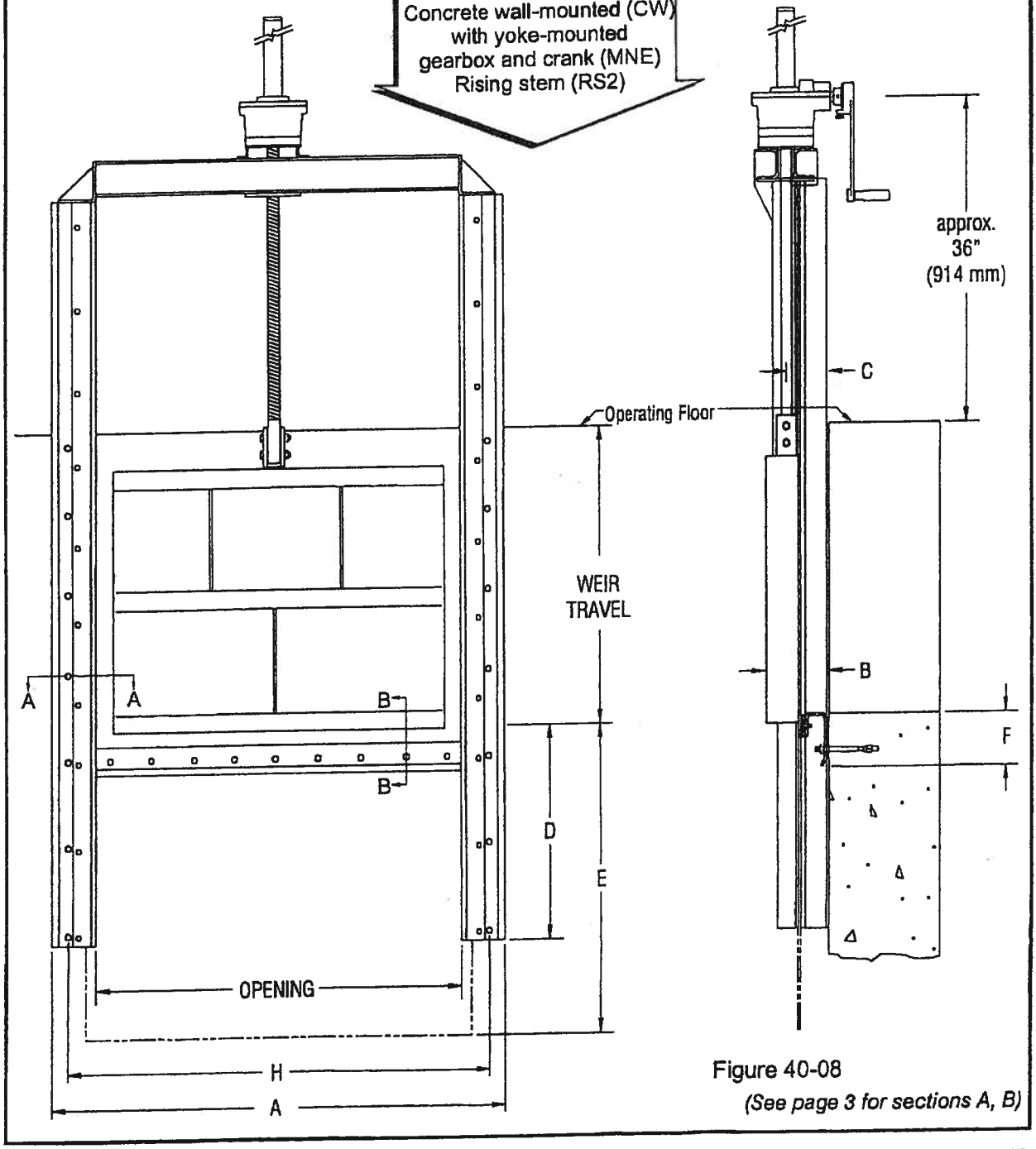


Figure 40-08

(See page 3 for sections A, B)

Frame and Stem Configurations

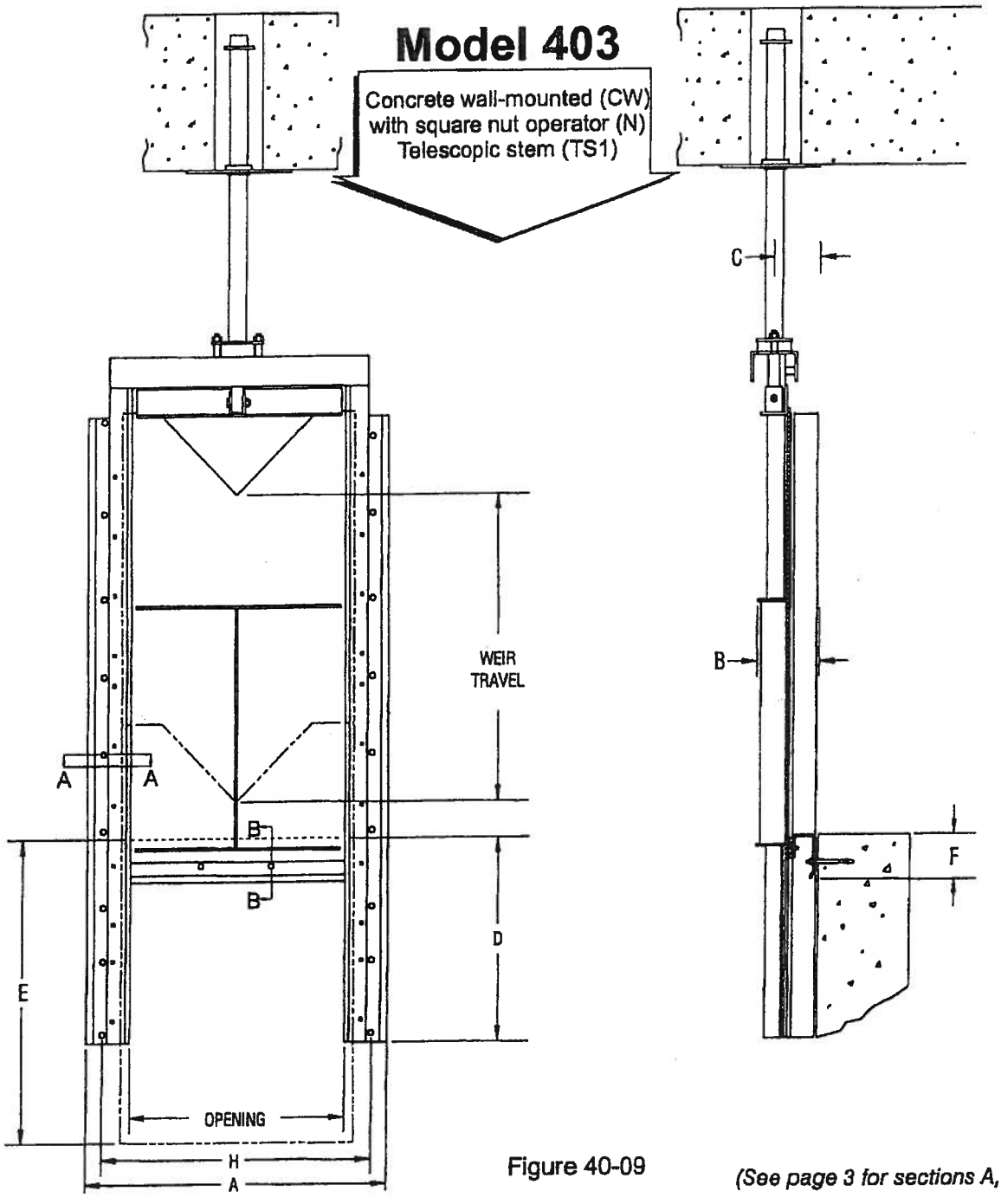


Figure 40-09

(See page 3 for sections A, B)

Fontaine

SERIES 40
DOWNWARD-OPENING WEIR GATES

Dimensional Chart*

FOR STANDARD CONCRETE WALL MOUNTED GATES (**CW**)

Gate size (**) Inches / mm	A	B	C		D	E	F	H
			Rising stem	Non-rising stem				
6x6	15 1/2	6	4 3/4	4 3/4	6 1/2	8 1/2	4 3/4	12
150x150	392	152	121	121	164	214	121	303
8x8	17 1/2	6	4 3/4	4 3/4	7 7/8	10 1/2	4 3/4	14
200x200	442	152	121	121	197	264	121	353
10x10	19 1/2	6	4 3/4	4 3/4	9 1/8	12 1/2	4 3/4	16
250x250	491	152	121	121	231	314	121	402
12x12	21 1/2	6	4 3/4	4 3/4	10 1/2	14 1/2	4 3/4	18
300x300	541	152	121	121	264	364	121	452
14x14	23 1/2	6	4 3/4	4 3/4	11 7/8	16 1/2	4 3/4	20
350x350	591	152	121	121	297	414	121	502
15x15	24 1/2	6	4 3/4	4 3/4	12 1/2	17 1/2	4 3/4	21
16x16	25 1/2	6	4 3/4	4 3/4	13 1/8	18 1/2	4 3/4	22
400x400	642	152	121	121	331	464	121	553
18x18	27 1/2	6	4 3/4	4 3/4	14 1/2	20 1/2	4 3/4	24
450x450	692	152	121	121	364	514	121	603
20x20	29 1/2	6	4 3/4	4 3/4	15 7/8	22 1/2	4 3/4	26
500x500	741	152	121	121	397	564	121	652
21x21	30 1/2	6	4 3/4	4 3/4	16 1/2	23 1/2	4 3/4	27
22x22	31 1/2	6	4 3/4	4 3/4	17 1/8	24 1/2	4 3/4	28
550x550	791	152	121	121	431	614	121	702
24x24	33 1/2	6	4 3/4	4 3/4	18 1/2	26 1/2	4 3/4	30
600x600	841	152	121	121	464	664	121	752
26x26	35 1/2	6	4 3/4	4 3/4	19 7/8	28 1/2	4 3/4	32
650x650	892	152	121	121	497	714	121	803
28x28	37 1/2	6	4 3/4	4 3/4	21 1/8	30 1/2	4 3/4	34
700x700	942	152	121	121	531	764	121	853
30x30	39 1/2	6	4 3/4	4 3/4	22 1/2	32 1/2	4 3/4	36
750x750	991	152	121	121	564	814	121	902
32x32	41 1/2	6	4 3/4	4 3/4	23 7/8	34 1/2	4 3/4	38
800x800	1041	152	121	121	597	864	121	952
34x34	43 1/2	6	4 3/4	4 3/4	25 1/8	36 1/2	4 3/4	40
850x850	1091	152	121	121	631	914	121	1002
36x36	45 1/2	6	4 3/4	4 3/4	26 1/2	38 1/2	4 3/4	42
900x900	1142	152	121	121	664	964	121	1053
38x38	47 1/2	7 1/4	4 3/4	5 1/4	27 7/8	40 1/2	4 3/4	44
950x950	1192	184	121	133	697	1014	121	1103

(*) These dimensions are for information only. Do not use for installation or submittal purposes.
(**) Fontaine Gates are also available for rectangular openings and in sizes other than those specified in this chart.

Fontaine

SERIES 40
DOWNWARD-OPENING WEIR GATES

Dimensional Chart*

CONT'D FOR STANDARD
CONCRETE WALL MOUNTED GATES (**CW**)

Gate size (**) Inches / mm	A	B	C		D	E	F	H
			Rising stem	Non-rising stem				
40x40	49 1/2	7 1/4	4 3/4	5 1/4	29 1/4	42 1/2	4 3/4	46
1000x1000	1241	184	121	133	731	1064	121	1152
42x42	51 1/2	7 1/4	4 3/4	5 1/4	30 1/2	44 1/2	4 3/4	48
1050x1050	1291	184	121	133	764	1114	121	1202
44x44	53 1/2	7 1/4	4 3/4	5 1/4	31 7/8	46 1/2	4 3/4	50
1100x1100	1341	184	121	133	797	1164	121	1252
46x46	55 1/2	7 1/4	4 3/4	5 1/4	33 1/8	48 1/2	4 3/4	52
1150x1150	1392	184	121	133	831	1214	121	1303
48x48	57 1/2	7 1/4	4 3/4	5 1/4	34 1/2	50 1/2	4 3/4	54
1200x1200	1441	184	121	133	864	1264	121	1362
50x50	59 1/2	7 1/4	5	5 1/2	35 7/8	52 1/2	4 3/4	56
1250x1250	1491	184	127	140	897	1314	121	1402
54x54	63 1/2	7 1/4	5	5 1/2	38 1/2	56 1/2	4 3/4	60
1400x1400	1641	184	127	140	997	1464	121	1552
60x60	69 1/2	7 3/4	5	5 1/2	42 1/2	62 1/2	4 3/4	66
1500x1500	1741	197	127	140	1064	1564	121	1652
66x66	75 1/2	7 3/4	5	5 1/2	46 1/2	68 1/2	4 3/4	72
1700x1700	1942	197	127	140	1197	1764	121	1853
72x72	81 1/2	7 3/4	5	5 1/2	50 1/2	74 1/2	4 3/4	78
1800x1800	2041	197	127	140	1264	1864	121	1952
78x78	90 1/2	8 1/2	5 3/4	***	54 5/8	80 5/8	6 1/4	86
2000x2000	2318	216	146		1397	2064	159	2203
84x84	96 1/2	8 3/4	5 3/4	***	58 5/8	86 5/8	6 1/4	92
2100x2100	2417	222	146		1464	2164	159	2303
90x90	102 1/2	10	5 3/4	***	62 5/8	92 5/8	6 1/4	98
2300x2300	2618	254	146		1597	2364	159	2503
96x96	108 1/2	11	6	***	66 5/8	98 5/8	6 1/4	104
2400x2400	2718	279	152		1664	2464	159	2604
102x102	114 1/2	11	6	***	70 5/8	104 5/8	6 1/4	110
2600x2600	2917	279	152		1797	2664	159	2803
108x108	120 1/2	12	6	***	74 5/8	110 5/8	6 1/4	116
2700x2700	3018	305	152		1864	2764	159	2903
114x114	126 1/2	12 1/2	6 1/8	***	78 5/8	116 5/8	6 1/4	122
2900x2900	3217	318	156		1997	2964	159	3103
120x120	132 1/2	12 1/2	6 1/4	***	82 5/8	122 5/8	6 1/4	128
3000x3000	3318	318	159		2064	3064	159	3203

(*) These dimensions are for information only. Do not use for installation or submittal purposes.
(**) Fontaine Gates are also available for rectangular openings and in sizes other than those specified in this chart.
(***) Please contact manufacturer for further details.

Typical Specifications

1. GENERAL CONDITIONS

1.1. SCOPE. This section covers Stainless Steel Downward Opening Weir Gates and operators.

1.2. GENERAL. The equipment provided under this section shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with the drawings, specifications, engineering data, instructions and recommendations of the equipment manufacturer unless exceptions are noted by the engineer.

Gates and operators shall be supplied with all the necessary parts and accessories indicated on the drawings, specified or otherwise required for a complete, properly operating installation and shall be the latest standard product of a manufacturer regularly engaged in the production of water control gates.

Weir gates supplied under this section shall be Series 40 Stainless Steel Downward Opening Weir Gates as manufactured by H.Fontaine Ltd.

1.3. GOVERNING STANDARDS. Except as modified or supplemented herein, all gates and operators shall conform to the applicable requirements of AWWA C513, latest edition.

1.4. QUALITY ASSURANCE

1.4.1. The manufacturer shall have experience in the production of substantially similar equipment, and shall show evidence of satisfactory operation in at least 50 installations. The manufacturer's shop welds, welding procedures and welders shall be qualified and certified in accordance with the requirement of the latest edition of ASME, Section IX.

1.4.2. Weir gates shall be shop inspected for operation before shipping.

1.4.3. The manufacturer shall be ISO 9001 : 2000 certified.

1.5. SUBMITTALS. The manufacturer shall submit, for approval by the purchaser, drawings showing the principal dimensions, general construction and materials used in the gate and lift mechanism.

2. PERFORMANCE

2.1. LEAKAGE. Weir gates shall be substantially watertight under the design head conditions. Leakage shall not exceed 0.05 U.S. gallon per minute per foot (0.60 l/min per meter) of seal periphery under the design seating head and 0.1 U.S. gallon per minute per foot (1.25 l/min per meter) of seal periphery for the design unseating head.

2.2. DESIGN HEAD. Weir gates shall be designed to withstand the design head (maximum design head shall be taken as the height of the slide unless otherwise shown in the schedule).

2.3. SEAL PERFORMANCE TEST. The weir gate's sealing system should have been tested through a cycle test in an abrasive environment and should show that the leakage requirements are still obtained after 25,000 cycles with a minimum deterioration.

3. PRODUCT

3.1. WEIR GATES

3.1.1. GENERAL DESIGN. Weir gates shall be either self-contained or non self-contained, and of the rising stem or non-rising stem configuration, as indicated on the gate schedule.

3.1.3. FRAME. The gate frame shall be constructed of structural members or formed plate welded to form a rigid one-piece frame. The frame shall be of the flange back design, suitable for mounting on a concrete wall (CW). The guide slot shall be made of UHMWPE (ultra high molecular weight polyethylene).

3.1.4. SLIDE. The slide shall consist of a flat plate reinforced with formed plates or structural members to limit its deflection to 1/720 of the gate's span under the design head.

3.1.5 GUIDES AND SEALS. The guides shall be made of UHMWPE (ultra high molecular weight polyethylene) and shall be of such length as to retain and support at least two thirds (2/3) of the vertical height of the slide in the fully open position.

The bottom and side seals shall be made of UHMWPE (ultra high molecular weight polyethylene) of the self adjusting type. A continuous compression cord shall ensure contact between the UHMWPE guide and the gate in all positions. The sealing system shall maintain efficient sealing in any position of the slide and let the water flow only in the open part of the gate.

Seals shall maintain the specified leakage rate in both seating and unseating conditions.

3.2. OPERATORS AND STEM

3.2.1. STEM AND COUPLINGS. The operating stem shall be of stainless steel designed to transmit in compression at least two (2) times the rated output of the operating manual mechanism with a 40 lbs (178 N) effort on the crank or handwheel.

The stem shall have a slenderness ratio (L/r) less than 200. The threaded portion of the stem shall have machine cut threads of the Acme type.

Where a hydraulic, pneumatic or electric operator is used, the stem design force shall not be less than 1.25 times the output thrust of the hydraulic or pneumatic cylinder, with a pressure equal to the maximum working pressure of the supply or 1.25 times the output thrust of the electric motor in the stalled condition.

3.2.1.1. For stems in more than one piece and with a diameter of 1 ¾ inches (45 mm) and larger, the different sections shall be joined together by solid bronze couplings. Stems with a diameter smaller than 1 ¾ inches, shall be pinned to an extension tube.

The couplings shall be grooved and keyed and shall be of greater strength than the stem.

3.2.1.2. Gates having width equal to or greater than two times their height shall be provided with two lifting mechanisms connected by a tandem shaft.

3.2.2. STEM GUIDES. Stem guides shall be fabricated from type 304L (or 316L) stainless steel. The guide shall be equipped with an UHMWPE bushing. Guides shall be adjustable and shall be spaced in accordance with the manufacturer's recommendation. The L/r ratio shall not be greater than 200.

3.2.3. STEM COVER. Rising stem gates shall be provided with a clear polycarbonate stem cover. The stem cover shall have a cap and condensation vents as well as a clear mylar position indicating tape. The tape shall be field applied to the stem cover after the gate has been installed and positioned.

3.2.4. LIFTING MECHANISM. Manual operators of the types listed in the schedule shall be provided by the gate manufacturer.

All bearings and gears shall be totally enclosed in a weather tight housing. The pinion shaft of crank-operated mechanisms shall be constructed of stainless steel and supported by roller or needle bearings.

Each manual operator shall be designed to operate the gate under the maximum specified seating and unseating heads by using a maximum effort of 40 lbs (178 N) on the crank or handwheel, and shall be able to withstand, without damage, an effort of 80 lbs (356 N).

The crank shall be removable and fitted with a corrosion resistant rotating handle. The maximum crank radius shall be 15 inches (381 mm) and the maximum handwheel diameter shall be 24 inches (610 mm).

3.2.5. YOKE. Self-contained gates shall be provided with a yoke made of structural members or formed plates. The maximum deflection shall be 1/360 of the gate's span.

4. MATERIALS

Part	Material
Frame, yoke, stem guides, slide, stem extension	Stainless steel ASTM A-240 Type 304L or 316L
Guides, side and bottom seals, stem guide liner	Ultra high molecular weight polyethylene (UHMWPE) ASTM D-4020
Compression cord	Nitrile ASTM D-2000 M6BG 708, A14, B14, E014, E034
Threaded stem	Stainless steel ASTM A-276 Type 303 MX or 316
Fasteners	ASTM F593 and F594 GR1 for type 304 and GR2 for type 316
Pedestal, handwheel, crank	Tenzaloy aluminum
Gasket (between frame and wall)	EPDM ASTM 1056
Stem cover	Polycarbonate ASTM D-3935
Lift nut, couplings	Manganese bronze ASTM B584 UNS-C86500

5. SCHEDULE

Gate Identification		
Gate Type		
Size Width x Height		
Operating Floor Elevation		
Invert Elevation		
Head (Seating / Unseating)		
Mounting		

Gate Type: Open or self-contained

Mounting: CW - Mounted concrete wall

6. EXECUTION

6.1. INSTALLATION. Gates and appurtenances shall be handled and installed in accordance with the manufacturer's recommendations.

6.2. FIELD TESTS

6.2.1. Following the completion of each gate installation, the gates shall be operated through at least two complete open/close cycles. If an electric or hydraulic operator is used, limit switches shall be adjusted following the manufacturer's instructions.

6.2.2. Gates should be checked for leakage by the contractor (refer to the "Performance" section for approval criteria).

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/19/2007

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
008	15500A, Para 2.2	HDPE, DR 11	7/19/2007						

X For Review & Approval ☐ For Your Use

REMARKS:

Copies To: Mike Valls
File

From: Jerry Resnik
Senior Project Manager

Charter Plastics

Polyethylene Pipe Pioneer

PE 3408 DIPS – POTABLE WATER PIPE

Pressure Rated HDPE Municipal & Industrial Pipe
BLACK PIPE with Three *Pair* of Evenly Spaced BLUE STRIPES

Designed for Municipal and Industrial Applications

Water Distribution

		DR 17 (100 PSI)			DR 13.5 (128 PSI)			DR 11 (160 PSI)			DR 9 (200 PSI)			
IPS PIPE SIZE	NOMINAL OD	MIN WALL	AVG ID (IN)	WEIGHT LBS/FT	MIN WALL	AVG ID (IN)	WEIGHT LBS/FT	MIN WALL	AVG ID (IN)	WEIGHT LBS/FT	MIN WALL	AVG ID (IN)	WEIGHT LBS/FT	
3"	3.96	N/A	N/A	N/A	N/A	N/A	N/A	.360	3.197	1.77	N/A	N/A	N/A	*
4"	4.80	.283	4.202	1.75	.356	4.045	2.17	.437	3.876	2.61	.533	3.670	3.11	*
6"	6.90	.406	6.039	3.62	.512	5.817	4.48	.628	5.571	5.39	.767	5.274	6.44	*
8"	9.05	.533	7.922	6.22	.670	7.630	7.70	.823	7.305	9.28	1.006	6.917	11.07	*
10"	11.10	.653	9.716	9.37	.823	9.357	11.59	1.009	8.961	13.95	1.233	8.486	16.65	*
12"	13.20	.777	11.555	13.24	.978	11.127	16.40	1.200	10.656	19.73	1.467	10.090	23.55	*

Pipe is available in black with **3 pair** of blue stripes.

Available in straight lengths only.

OD and Min wall is based on ASTM F714

Weight calculations are based on PPI TR-7

Average Inside Diameters are calculated using nominal OD and Min Wall plus 6% for use in estimating fluid flow.

Charter Plastics DIPS Potable Water Pipe – Black with Blue Stripes- is color coded for immediate identification. The DIPS pipe is black with three **pair** of evenly spaced blue stripes.

Flexible yet rugged, this pipe can withstand the working pressures and pressure surges that occur in water distribution. Yet inside, the pipe has an exceptionally smooth inner wall for better flow capabilities. For outstanding performance from your municipal and industrial water distribution system, choose Charter pipe.

PE 3408 DIPS POTABLE WATER PIPE – BLACK with BLUE STRIPES

SPECIFICATIONS:
PE 3408 Resin listed in PPI TR4
NSF Standard 14 AWWA C901 and AWWA C906 and Standard 61

ASTM F 714

Cell Classification per ASTM D 3350 = 345464E

PRESSURE RATINGS:
All pressure ratings are a maximum PSI @ 73.4°F.
If temperatures exceed 80° F, contact Charter Plastics for a working pressure de-rating.

INSTALLATION:
All Charter PE 3408 DIPS Potable Water Pipe can be direct buried, plowed or pulled. This pipe is not designed for in-house or hot water applications. Buried pipe must be supported by embedment material like sand or gravel. Refer to ASTM D2774 as well as all local, state or federal guidelines.

JOINING:
Charter Plastics DIPS Potable Water Pipe is made to corresponding standards of ASTM F714, AWWA C901 and AWWA C906 Standards.

For permanent leak free joints, Charter recommends joining this pipe with heat fusion. The installer should be certified in heat fusion. Fusion procedures published by Charter Plastics or by PPI in TN13-2001 should be followed.

This pipe may also be joined with mechanical fittings, flanged connections, MJ Adaptors or electro fusion. A stiffener should be inserted when using OD compression type fittings.

COMPASS ENVIRONMENTAL INC

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/19/2007

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
008A	15110	Valves	7/19/2007						

	For Review & Approval	X	For Your Use

REMARKS:

Copies To: Mike Valls
File

From: Jerry Resnik
Senior Project Manager

M300 Series
Brass Gate Valves - Full Port

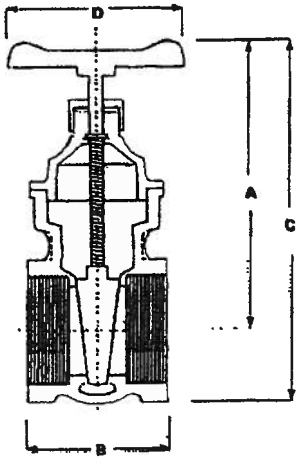


FIGURE: M300
- Full Port
- Threaded Ends
- Non-rising Stem
- Solid Wedge Disc

RATINGS:
200 psi WOG

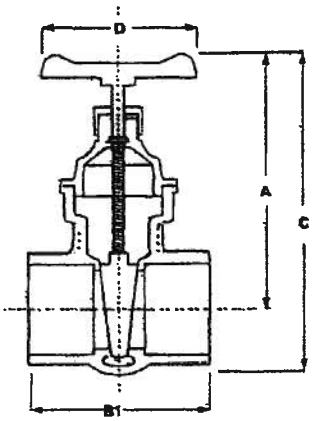


FIGURE: M300S
- Full Port
- Sweat Ends
- Non-rising Stem
- Solid Wedge Disc

DIMENSIONS:

		¼"	⅜	½	¾	1	1¼	1½	2	2½	3	4
A	*Center of Port to top*	2 ¾	2 ¾	2 ⅞	3 ¾	3 ⅞	4 ⅜	5	6	7 5/16	8 ½	9 ⅝
B	*End to End*	1 ⅜	1 ⅜	1 ⅜	1 ⅞	2 ⅛	2 ⅜	2 ⅝	2 ⅞	3 ½	3 ¾	4 ½
B1	*End to End*		1 ½	1 ¾	2 5/16	2 ¾	2 ⅞	3 ¼	3 ⅞	4 ⅜	5 ¼	
C	*Overall Height*	3 ⅛	3 ⅛	3 ⅜	4	4 ⅛	5 ⅛	6	7 ⅛	9 ⅛	10 ⅛	12 ⅜
D	*Wheel Diameter*	2 ⅛	2 ⅛	2 ⅛	2 ⅛	2 ⅜	3	3	3 ¼	4 ⅛	5	6 ¾
	Weight lbs. Thd.	0.55	0.5	0.6	0.8	1.1	1.75	2.05	3.35	6.3	9.1	16.6
	Weight lbs. Swt.		0.5	0.55	0.75	1.1	1.65	1.9	3.15	5.75	8.85	

AMERICAN VALVE®
Industry Leading Innovation

13 Bronze Globe Valve

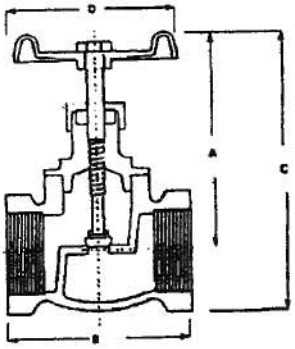


FIGURE: 13
- Threaded Ends
- Bronze Disc
- Teflon® Packing

RATINGS:
125 psi WSP
200 psi WOG

Part	Material
Wheel Nut	Steel
Handlewheel	Cast Iron
Packing Nut	Bronze ASTM B-16
Packing	Teflon®
Bonnet	Bronze ASTM B-145
Stem	Bronze ASTM B-16
Disc Lock Nut	Bronze ASTM B-16
Disc	Bronze ASTM B-16
Body	Bronze ASTM B-145

DIMENSIONS:

	¼	⅜	½	¾	1	1¼	1½	2
A	2 ¾	2 ¾	3 ¼	3 ⅝	4	4 ½	5 ¼	6 ⅜
B	1 ¾	1 ¾	2	2 ⅜	2 ¾	3 ¼	3 ¾	4 ¼
C	3 ¼	3 ¼	3 ⅞	4 ⅜	4 ⅞	5 ⅝	6 ½	8 ⅛
D	2	2	2 ¾	2 ¾	2 ¾	3	3 ¼	3 ¾
Weight lbs.	.43	.40	.58	1.00	1.32	2.11	2.72	4.95

14N Bronze Angle Valve

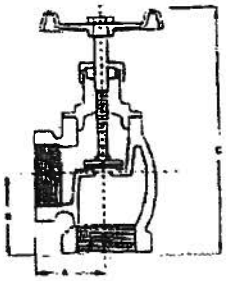


FIGURE: 14N
- Threaded Ends
- Neoprene Disc

RATING:
200 psi WOG

DIMENSIONS:

		¼	⅜	½	¾	1	1¼	1½	2
A	Center of Inlet to Face of Outlet	27/32	15/16	1 3/32	1 7/32	1 15/32	1 ¾	2	2 11/32
B	Center of Outlet to Face of Inlet	27/32	15/16	1 3/32	1 7/32	1 15/32	1 ¾	2	2 11/32
C	Center of Port to Top (Closed)	2 ¾	3	3 ¼	3 ⅝	4	4 ½	5 ¼	6 ½
D	Diameter of Wheel	1 ¾	1 ¾	2 ½	2 ¾	2 ¾	3	3 ½	3 ½
	Weight lbs.	.44	.56	.69	.94	1.76	2.50	3.26	5.32

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CHARLEROI, PA 15022

COMPASS ENVIRONMENTAL INC

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Stuart Klaus, sklaus@secor
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 10/31/2007

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Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
008A-Plastic	15110	Plastic Valves	10/31/2007						

[ ] For Review & Approval [ ] For Your Use

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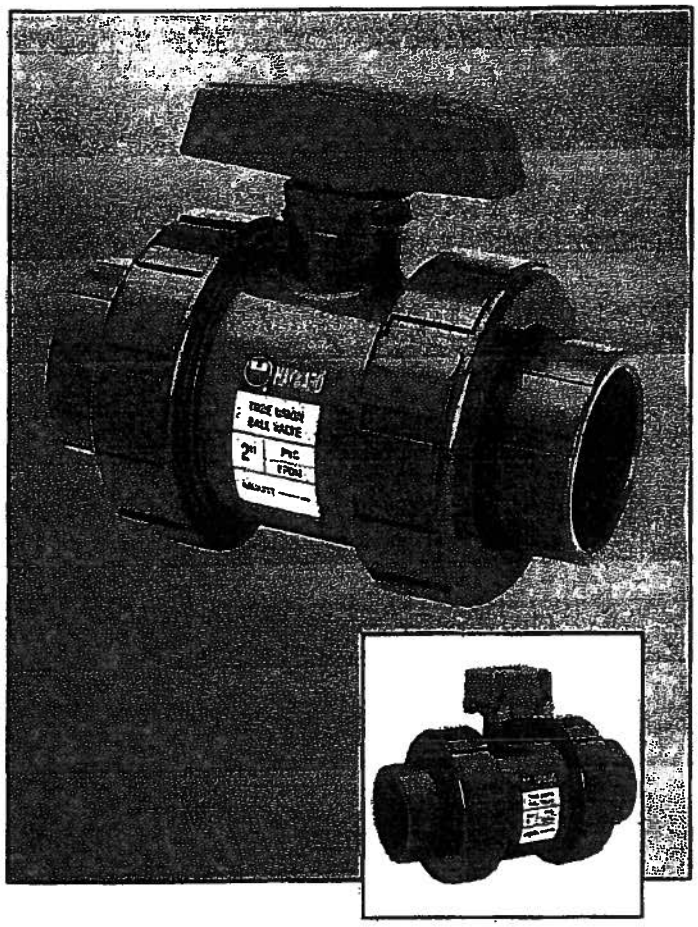
Senior Project Manager

True Union Ball Valves

1/4" to 6" - PVC, Corzan® CPVC, PPL



Features

- Full Port Design
- Reversible PTFE Seats
- Easy Maintenance
- FPM or EPDM Seals
- Easily Automated
- Double O-Ring Stem Seals
- Adjustable Seat Retainer

Corzan® is a registered trademark of Noveon, Inc.

Options

- Stem Extensions
- Lockouts
- Spring Return Handle
- Pneumatic Actuators
- Electric Actuators
- 2" Square Operating Nuts
- Drilled Balls for Sodium Hypochlorite Service

Rugged, Heavy Wall Plastic Construction

Stands up to the most aggressive of applications. Hayward True Union Ball Valves can take the day to day abuse of industrial service and continue to function.

True Union Design

This makes these valves very easy to maintain by allowing for easy removal from a piping system without breaking down piping connections. Just unscrew the two assembly nuts and lift the valve body out of the line.

Advanced Design Features

Hayward True Union Ball Valves are superior performers. A fine-pitch seal retainer thread allows for accurate compensation for seat wear. Reversible seats make it easy to get a damaged valve back in service. Should the seats become damaged they need only to be removed, turned over, and reinstalled to put the valve back on line. These valves feature a double o-ring stem seal for twice the leakage protection of valves with only a single stem seal.

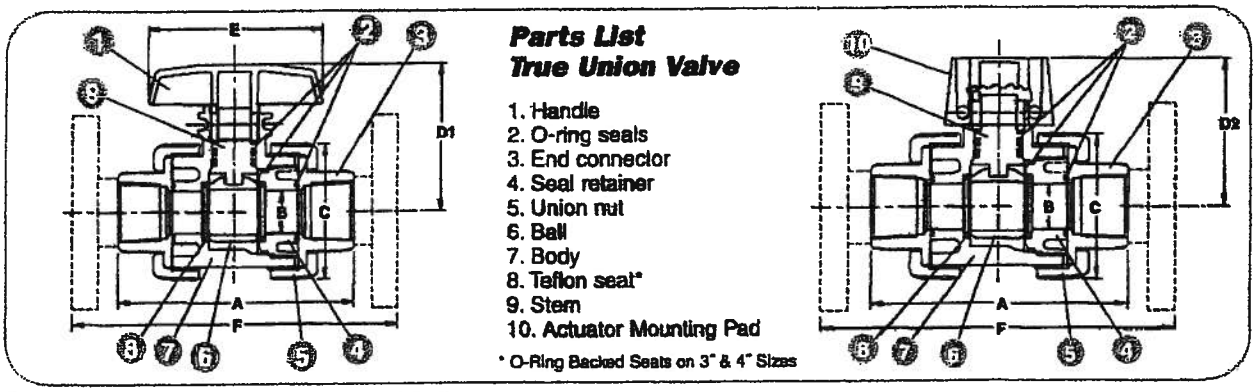
Solid Actuator Mounting Design

For rock-solid actuator mounting, the valve incorporates a unique design that allows the actuator mounting bracket to mount directly to the valve without the need for glued or clamped-on mounting pads. This assures proper alignment of the actuator to the valve without creating any damaging side loads to cause premature stem seal failure. With this design, the valve can easily be adapted to manual operation – should the need ever arise.

Never a Problem with Corrosion

Because of the valves' all plastic construction, they will never rust or corrode – and they can survive corrosive environments without the need for painting or expensive epoxy coating.

Technical Information



Parts List
True Union Valve

1. Handle
2. O-ring seals
3. End connector
4. Seal retainer
5. Union nut
6. Ball
7. Body
8. Teflon seat*
9. Stem
10. Actuator Mounting Pad

* O-Ring Backed Seats on 3" & 4" Sizes

Dimensions - Inches / Millimeters

Size	A	B	C	D1	D2	F	Weight (lb / kg) Soc/Thd	Weight (lb / kg) Flanged
1/4	4.63 / 117	0.37 / 13	2.25 / 57	3.00 / 76	2.63 / 67	N/A	0.75 / 0.34	N/A
3/8	4.63 / 117	0.50 / 13	2.25 / 57	3.00 / 76	2.63 / 67	N/A	0.75 / 0.34	N/A
1/2 / 20*	4.63 / 117	0.50 / 13	2.25 / 57	3.00 / 76	2.63 / 67	6.75 / 171	0.75 / 0.34	1.00 / 0.45
3/4 / 25*	4.75 / 120	0.75 / 19	2.63 / 67	3.02 / 77	2.81 / 72	7.13 / 181	0.75 / 0.34	1.00 / 0.45
1 / 32*	5.25 / 133	1.00 / 25	3.00 / 76	3.32 / 84	3.05 / 77	8.00 / 203	1.15 / 0.52	2.15 / 0.98
1-1/4 / 40*	6.30 / 160	1.25 / 32	4.00 / 102	3.92/ 100	3.48 / 88	9.19 / 233	2.15 / 0.98	3.50 / 1.6
1-1/2 / 50*	6.75 / 171	1.50 / 38	4.00 / 102	3.92/ 100	3.48 / 88	9.88 / 249	2.15 / 0.98	3.75 / 1.7
2 / 63*	8.00 / 203	2.00 / 51	4.75 / 121	4.43/ 113	4.00 / 101	11.4 / 289	3.80 / 1.7	6.30 / 2.9
2-1/2	10.68 / 271	3.00 / 76	6.40 / 163	5.50 / 140	5.50 / 140	14.38 / 365	10.50 / 4.8	14.50 / 6.6
3 / 90*	10.56 / 268	3.00 / 76	6.40 / 163	5.50 / 140	5.50 / 140	14.44 / 367	10.50 / 4.8	14.50 / 6.6
4 / 110*	12.30 / 329	3.81 / 97	8.56 / 217	6.50 / 165	6.50 / 165	17.13 / 435	17.60 / 8.0	24.80 / 11.3
6	N/A	3.81 / 97	8.56 / 217	6.50 / 165	6.50 / 165	19.19 / 487	N/A	30.75 / 14.0

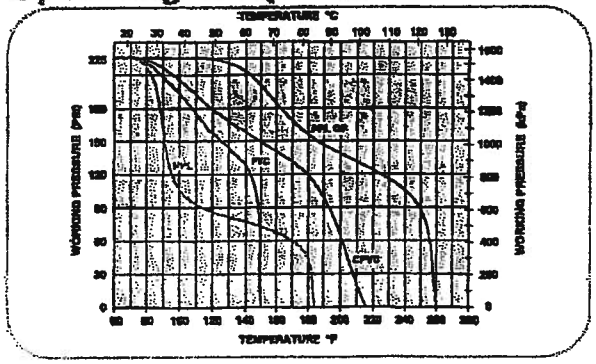
* Metric End Connections Available In: BSP – Straight Thread, BSP TR – Tapered Thread and Metric Socket

Selection Chart

Size	Material	End. Conn	Seals	Pressure Rating
1/4" - 3/8"	PVC	Socket or Threaded	FPM or EPDM	225 PSI @70°F Non-Shock
1/2" - 4"	PVC or CPVC	Socket, Threaded or Flanged		
1/2" - 2"	PPL*	Threaded		
6"**	PVC or CPVC	Flanged		

* natural PPL - 1/2" to 1-1/2" rated at 150PSI, 2" = 120PSI ** 4" Valve venturied to 6"

Operating Temperature/Pressure



Cv Factors

Size	Factor	Size	Factor
1/4"	1.0	1-1/2"	90
3/8"	2.8	2"	150
1/2"	8.0	2-1/2"	340
3/4"	16.0	3"	490
1"	29.0	4"	600
1-1/4"	75.0	6"	550

Pressure Loss Calculation Formula

$$\Delta P = \left[\frac{Q}{Cv}\right]^2$$

ΔP = Pressure Drop
Q = Flow in GPM
Cv = Flow Coefficient

GATE VALVES

Features – PVC, CPVC

This solid, proven design is well suited for a variety of chemical, industrial and irrigation applications. Spears® Gate Valves are feature-packed with a variety of end connector options. Individual special features are found in each size range 1/2" through 2", 2-1/2" & 3", and in the full featured Heavy Industrial 4" valve. See Spears® Plug Gate Valves for 6" size.

- Heavy Bodied PVC & CPVC Construction
- Tapered Wedge with Specially Designed Sealing Surface
- Non-Rising Stem Design
- Patented Strain-Equalizing Stem/Wedge Thread
- O-ring Stem Seals Instead of Packing - No Retightening Required
- Buna-N, EPDM, or Viton® O-ring Seals
- Positive Grip, High Impact Polypropylene Handwheel Operator
- Fully Serviceable, Replaceable Components - Accessible Without Valve Removal
- NSF Certified for Potable Water use
- Suitable for Vacuum Service
- Assembled with Silicone-Free, Water Soluble Lubricants
- Metric Socket and BSP Thread Available, 1/2" - 2"

1/2" - 2" PVC & CPVC Heavy Duty Gate Valves

- Available with socket, threaded or flanged end connectors.
- Pressure rated to 200 psi @ 73°F. Flanged Valve Pressure Rated to 150 psi @ 73°F

2-1/2" & 3" PVC & CPVC Heavy Duty Gate Valves

- Available with socket, SR (Special Reinforced) threaded or flanged end connectors.
- Pressure rated to 150 psi @ 73°F.
- Optional 2" Square/T-Style Operator Nut available.

Note: 2-1/2" size is a bushed down 3" valve.

4" PVC & CPVC Heavy Industrial Gate Valves

- Available with socket, SR (Special Reinforced) threaded or flanged end connectors.
- Pressure rated to 235 psi @ 73°F. Flanged Valve Pressure Rated to 150 psi @ 73°F
- SS 316 Exterior Bonnet & Hardware
- Built-in Quick-View Position Indicator
- Optional 2" Square/T-Style Operator Nut available.

Sample Engineering Specification

All thermoplastic Gate Valves shall be constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447. All O-rings shall be Buna-N, EPDM or Viton®. All valves shall have non-rising stem and Polypropylene handwheel. All valve gate wedges shall have Strain-Equalizing threads. PVC valves shall have Polypropylene wedge and CPVC valves shall have CPVC wedge. All valve components shall be replaceable. All 1/2" through 2" valves shall be pressure rated at 200 psi, all 2-1/2" through 3" valves shall be pressure rated at 150 psi, and all 4" valves shall be pressure rated at 235 psi for water at 73°F, as manufactured by Spears® Manufacturing Company.

GATE VALVES

Quick-View Valve Selection Chart

Valve Size	O-ring Material	PVC Part Numbers[1]			Pressure Rating
		Socket	Threaded	Flanged	
1/2	Buna-N	2012-005	2011-005	2013-005	200 psi Non-Shock Water @ 73°F (Flanged 150 psi Non-Shock Water @ 73°F)
	EPDM	2022-005	2021-005	2023-005	
	Viton®	2032-007	2031-005	2033-005	
3/4	Buna-N	2012-007	2011-007	2013-007	
	EPDM	2022-007	2021-007	2023-007	
	Viton®	2032-007	2031-007	2033-007	
1	Buna-N	2012-010	2011-010	2013-010	
	EPDM	2022-010	2021-010	2023-010	
	Viton®	2032-010	2031-010	2033-010	
1-1/4	Buna-N	2012-012	2011-012	2013-012	
	EPDM	2022-012	2021-012	2023-012	
	Viton®	2032-012	2031-012	2033-012	
1-1/2	Buna-N	2012-015	2011-015	2013-015	
	EPDM	2022-015	2021-015	2023-015	
	Viton®	2032-015	2031-015	2033-015	
2	Buna-N	2012-020	2011-020	2013-020	
	EPDM	2022-020	2021-020	2023-020	
	Viton®	2032-020	2031-020	2033-020	
2-1/2	Buna-N	2012-025[3]	2011-025[3]	2013-025[3]	150 psi Non-Shock Water @ 73°F
	EPDM	2022-025[3]	2021-025[3]	2023-025[3]	
	Viton®	2032-025[3]	2031-025[3]	2033-025[3]	
3	Buna-N	2012-030	2011-030SR	2013-030	
	EPDM	2022-030	2021-030SR	2023-030	
	Viton®	2032-030	2031-030SR	2033-030	
4	Buna-N	2012-040	2011-040SR	2013-040	235[2] psi Non-Shock Water @ 73°F
	EPDM	2022-040	2021-040SR	2023-040	
	Viton®	2032-040	2031-040SR	2033-040	

1: For CPVC valves, add the letter "C" to the part numbers (e.g., 2031-005C).
2: Flanged end connectors have a Maximum Internal Pressure Rating of 150 psi @ 73°F.
3: Outlet sized with bushing.

C_V Values

Nominal Size	C_V[1] Gallons/Minute	
	Socket/Threaded	Flanged
1/2	19	15
3/4	37	29
1	44	39
1-1/4	128	105
1-1/2	144	127
2	333	279
2-1/2	See Note 2	
3	335	323
4	583	566

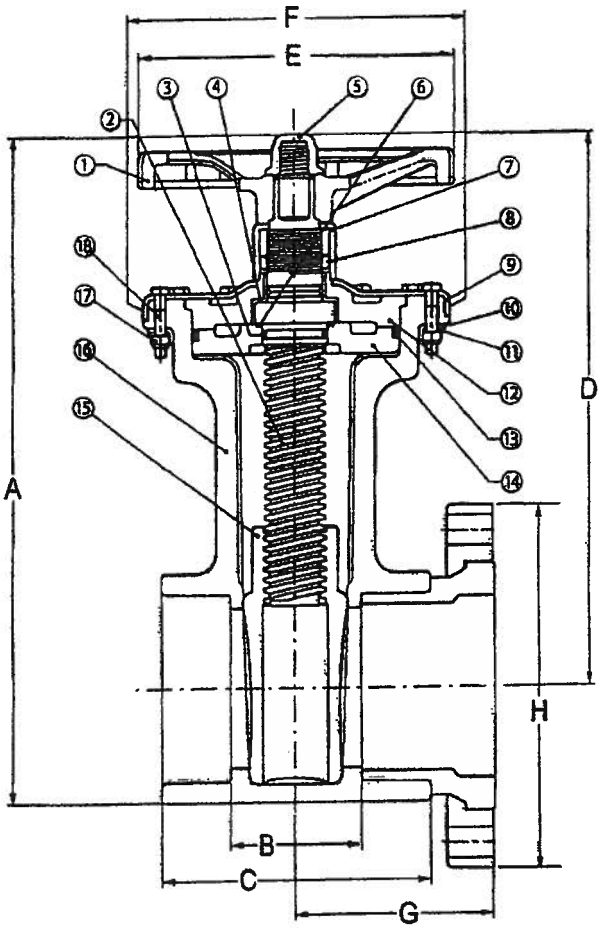
Flanged valves calculated for additional laying length of flanged valve.
1: Gallons per minute at 1 psi pressure drop.
2: Size 2-1/2" is a reducer bushed down 3" valve, C_v not available.

Temperature Pressure Rating

System Operating Temperature °F (°C)			100 (38)	110 (43)	120 (49)	130 (54)	140 (60)	150 (66)	160 (71)	170 (77)	180 (82)	190 (88)	200 (93)	210 (99)
Valve Pressure Rating psi (MPa)	1/2"-2"	PVC	200 (1.38)	135 (.93)	120 (.83)	75 (.52)	50 (.34)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)
		CPVC	200 (1.38)	155 (1.07)	140 (.97)	125 (.86)	110 (.76)	100 (.69)	90 (.62)	80 (.55)	70 (.48)	60 (.41)	50 (.34)	-0- (-0-)
	2-1/2"-3"	PVC	150 (1.03)	130 (.90)	110 (.76)	60 (.41)	50 (.34)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)
		CPVC	150 (1.03)	140 (.97)	130 (.90)	120 (.83)	110 (.76)	100 (.69)	90 (.62)	80 (.55)	70 (.48)	60 (.41)	50 (.34)	-0- (-0-)
	4"	PVC	235 (1.62)	140 (.97)	130 (.90)	90 (.62)	50 (.34)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)	-0- (-0-)
		CPVC	235 (1.62)	219 (1.51)	170 (1.17)	145 (1.00)	130 (.90)	110 (.76)	95 (.66)	80 (.55)	70 (.48)	60 (.41)	50 (.34)	-0- (-0-)

NOT FOR USE WITH COMPRESSED AIR OR GASES

GATE VALVES



4" Replacement Parts

No.	Component	Qty.	Material
1	Handle	1	PP
2	Stem	1	PVC/CPVC
3	Stem O-ring	1	Buna-N/EPDM/Viton®
4	Stem Bushing	1	Poly Teflon®
5	Stem Nut	1	PVC/CPVC
6	Stem Washer	1	PP
7	Indicator Cover	1	PVC Clear
8	Indicator Nut	1	PP Yellow
9	Bonnet Retainer	1	SS 316
10	Retainer Bracket	2	SS 316
11	Bracket Lock	1	SS 316
12	Bonnet	1	PVC/CPVC
13	Seal Carrier O-ring	1	Buna-N/EPDM/Viton®
14	Seal Carrier	1	PVC/CPVC
15	Wedge	1	PP/CPVC
16	Body	1	PVC/CPVC
17	Locknut	12	SS 316
18	Hex Bolt	12	SS 316

Dimensions & Weights

Nominal Size	Dimension Reference (Inches, ± 1/16)								Approx. Wt. (Lbs.)			
									PVC		CPVC	
	A	B[1]	C	D	E	F	G	H	Soc/Thd	Flanged	Soc/Thd	Flanged
1/2	5-1/8	1-1/4	2-13/16	4-1/8	2-5/8	2-11/16	2-3/16	3-1/2	.51	.92	.56	.98
3/4	5-1/8	1-1/4	2-13/16	4-1/8	2-5/8	2-11/16	2-1/4	3-7/8	.52	1.09	.57	1.16
1	5-13/32	1-1/4	3-5/16	4-5/16	2-5/8	2-15/16	2-11/16	4-1/4	.67	1.46	.73	1.54
1-1/4	8-1/16	1-9/16	3-9/16	6-5/8	3-7/16	3-15/16	2-3/4	4-5/8	1.61	2.58	1.73	2.74
1-1/2	8-1/16	1-9/16	3-9/16	6-1/2	3-7/16	3-15/16	3-7/16	5	1.63	2.81	1.75	3.03
2	9-13/16	1-7/8	3-15/16	6-15/16	3-7/16	4-7/16	3-5/8	6	1.95	3.81	2.15	4.09
2-1/2	14-5/16	3-9/16	7-11/16	12-1/16	6-11/16	7-1/4	5-1/8	7-1/2	9.48	11.91	9.60	12.89
3	14-5/16	2-15/16	6-11/16	12-1/16	6-11/16	7-1/4	4-15/16	7-1/2	9.03	12.21	9.43	13.40
4	16	3-3/8	7-15/16	13-1/4	8	7-9/16	5-9/16	9	13.67	18.39	14.66	19.75

1: Valve Lay Length

2" Square / T-Style Operator Nuts

- Fits Spears® Gate Valves.
- Combination design for use with either standard 2" square drive or conventional "T" drive operators.

Size	Part Number
1/2, 3/4, 1	GTN-005
1-1/4, 1-1/2, 2	GTN-012
2-1/2 & 3	GTN-030
4	GTN-040

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/19/2007

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Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
009	02210A, Para 2.5	Aggregate Backfill	7/19/2007						

X For Review & Approval For Your Use

REMARKS:

Copies To: Mike Valls
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From: Jerry Resnik
Senior Project Manager

Stephanie Andrews

From: Jerry Resnick [jresnick@compassenvironmental.com]
Sent: Thursday, July 19, 2007 1:21 PM
To: Sontchi, Joe P; Ken Hannon; Jennifer Menges; Srinivas Kappagantula; Stephanie Andrews
Cc: Ralph Schaar; Michael Vails; Gary Nelson; Peter Mosca
Subject: Subm 009-Aggregate Backfill
Attachments: compass aggregate backfill.doc; Cvr Sheet.xls

Good Afternoon,

Based on the information contained in the submittal and the source of the material, we are requesting a variance from the submittal requirement for

1. Chemical Analysis Test Data
2. Geophysical Test Data

prior to the start of on-site activities. Please note that the vendor has warranted the material to be free of contaminants and the source is NYSDOT approved.

Please advise at your earliest convenience as the approval of this material is a Critical Path item.

Thank you in advance.

Jerry

July 19, 2007

Compass Environmental, Inc.
604 Tiffan Avenue
Findlay, Ohio 45840

Attn: Jerry Resnick

RE: Wellsville Refinery
Section 2210A, Item 2.5
Aggregate Backfill

Dear Jerry,

We are submitting # 2 Crushed Gravel from our Alfred Plant for Section 2210A, Item 2.5 Aggregate Backfill. This product will meet the gradation requirements as listed, and it is a washed, durable product consisting of natural stone. Here is the typical gradation as well as the requirements listed in the Section:

Sieve	% passing	spec
1 ½"	100	95-100
1"	95	na
½"	15	na
#4	2	0-10*
#200	< 1	0-5

Our Alfred Plant is approved NYSDOT Source # 6-49G. It is a natural Sand & Gravel deposit free of contaminants.

Sincerely,

Gary D. Nelson, Buffalo Crushed Stone, Inc.

* Specification interpretation of 0-10% passing instead of "not more that 10% retained"

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/19/2007

WE ARE SENDING YOU

[X]	Specifications	[ ]	Plans	[ ]	Invoice
[ ]	Drawings	[ ]	Reports	[ ]	Information/Data
[ ]	Qualifications	[ ]	Samples	[ ]	Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Data	Resubmittal #	Comments
010	03400A, Para 1.4	Precast Concrete-Joint Sealant	7/19/2007						

[X] For Review & Approval [ ] For Your Use

REMARKS:

Copies To: Mike Valls
File

From: Jerry Resnik
Senior Project Manager

PRODUCT SPECIFICATIONS

ConSeal™ CS102

Concrete Sealants INC.

Butyl Rubber Sealant For All Precast Structures; Meets Specs.

APPLICATIONS

For self-sealing joints in: Manholes, Concrete Vaults, Septic Tanks, Concrete Pipe, Box Culverts, Utility Vaults, Burial Vaults, and Vertical Panel Structures.

SEALING PROPERTIES

- Provides permanently flexible watertight joints.
- Low to high temperature workability: 30°F to 120°F (-1°C to 48°C)
- Rugged service temperature: -30°F to +200°F (-34°C to +93°C)
- Excellent chemical and mechanical adhesion to clean, dry surfaces.
- Sealed Joints will not shrink, harden or oxide upon aging.
- No priming normally necessary. When confronted with difficult installation conditions, such as wet concrete or temperatures below 40°F (4°C), priming the concrete will improve the bonding action. Consult Concrete Sealants for the proper primer to meet your application.

HYDROSTATIC STRENGTH

ConSeal CS-102 meets the hydrostatic performance requirement as set forth In ASTM C-990 section 10.1 (Performance requirement: 10psi for 10 minutes in straight alignment – in plant, quality control test for joint materials.)

SPECIFICATIONS

ConSeal CS-102 meets or exceeds the requirements of Federal Specification SS-S-210 (210-A), AASHTO M-198B, and ASTM C-990-91.

P.O. Box 176, New Carlisle OH, 45344 • 937.845.8776 or 800.332.7325
FAX 937-845-3587 • www.conseal.com

PRODUCT SPECIFICATIONS

ConSeal™ CS102

Concrete Sealants INC.

Butyl Rubber Sealant For All Precast Structures; Meets Specs.

PHYSICAL PROPERTIES

	Spec	Required*	CS 102
Hydrocarbon blend content % by weight	ASTM D4 (mod.)	50% min.	51%
Inert mineral filler % by weight	AASHTO T111	30% min.	35%
Volatile Matter % by weight	ASTM D6	2% max.	1.2
Specific Gravity, 77°F	ASTM D71	1.15-1.50	1.25
Ductility, 77°F	ASTM D113	5.0 min.	10
Penetration, cone 77°F, 150 gm. 5 sec.	ASTM D217	50-100	55-60
Penetration, cone 32°F, 150 gm. 5 sec.	ASTM D217	40 mm	40-65
Flash Point, C.O.C., °F	ASTM D92	350°F min.	450°F
Fire point, C.O.C., °F	ASTM D92	375°F min.	475°F

IMMERSION TESTING

- 30-Day Immersion Testing: No visible deterioration when tested in 5% Caustic Potash, 5% Hydrochloric Acid, 5% Sulfuric Acid, and 5% saturated Hydrogen Sulfide. *

- One Year Immersion Testing: No visible deterioration when tested in 5% Formaldehyde, 5% Formic Acid, 5% Sulfuric Acid, 5% Hydrochloric Acid, 5% Sodium Hydroxide, 5% Hydrogen Sulfide and 5% Potassium Hydroxide.

- Requirements of ASTM C-990 Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

LIMITED WARRANTY
This information is presented in good faith, but we cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. We accept no responsibility for results obtained by the application of this information or the safety and suitability of our products, either alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each such product or product combinations for their own purposes. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for this own particular use. We sell this product without warranty, and buyers and users assume all responsibility and liability for loss or damage arising from the handling and use of this product, whether used alone or in combination with other products.

P.O. Box 176, New Carlisle OH, 45344 • 937.845.8776 or 800.332.7325
FAX 937-845-3587 • www.conseal.com

COMPASS ENVIRONMENTAL INC.

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/19/2007

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
011	02210A, Para 2.3	Pipe Bedding	7/19/2007						

X For Review & Approval For Your Use

REMARKS:

Copies To: Mike Valls
File

From: Jerry Resnik
Senior Project Manager

Stephanie Andrews

From: Jerry Resnick [jresnick@compassenvironmental.com]
Sent: Thursday, July 19, 2007 3:11 PM
To: Sontchi, Joe P; Ken Hannon; Srinivas Kappagantula; Stephanie Andrews
Cc: Michael Vails; Ralph Schaar; Peter Mosca
Subject: Subm 011 Pipe Bedding
Attachments: Pipe Bedding; Cvr Sheet.xls

Good Afternoon,

We are requesting the same variance from the specification requirement regarding testing based on the Supplier warranties and nature of the source.

Thank you in advance.

Jerry

July 19, 2007

Compass Environmental, Inc.
604 Tiffan Avenue
Findlay, Ohio 45840

Attn: Jerry Resnick

RE: Wellsville Refinery
Section 2210A, Item 2.3
Pipe Embedment

Dear Jerry,

We are submitting Screened # 1 Gravel from our Franklinville Plant for Section 2210A, Item 2.3 Pipe Embedment. This product will meet the gradation requirements as listed of minus ¾"; and this is a natural screened product with rounded edges. Here is the typical gradation:

Sieve	% passing
¾"	100
½"	88
¼"	7

Our Franklinville Plant is approved NYSDOT Source # 5-3G. It is a natural Sand & Gravel deposit free of contaminants.

Sincerely,

Gary D. Nelson, Buffalo Crushed Stone, Inc.

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/19/2007

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
012	02115A, Para 3.5	Decon Pad-Stone	7/19/2007						

X For Review & Approval For Your Use

REMARKS:

Copies To: Mike Valls
File

From: Jerry Resnik
Senior Project Manager

July 19, 2007

Compass Environmental, Inc.
604 Tiffan Avenue
Findlay, Ohio 45840

Attn: Jerry Resnick

RE: Wellsville Refinery
Decon Pad Aggregate, 2"

Dear Jerry,

We are submitting # 3's & 4's stone from our Wehrle Drive Quarry for the 2" Stone item for the Decon Pad.. This product will meet the description outlined by Mike Vails to me verbally. Here is the typical gradation:

Sieve	% passing
4"	100
3"	93
1"	10

Our Wehrle Drive Quarry is approved NYSDOT Source # 5-3R. It is a natural ledge rock quarry free of contaminants.

Sincerely,

Gary D. Nelson, Buffalo Crushed Stone, Inc.

COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/26/2007

WE ARE SENDING YOU

	Specifications		Plans		Invoice
X	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y X N

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
013	03400A, Para 1.4A	Splitter Structure Dwgs	7/26/2007					

X For Review & Approval

For Your Use

Deviations:

REMARKS/NOTES The Specification requirement for installation instructions is N/A

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

(1 EA.) CASCADE AERATOR SPLITTER

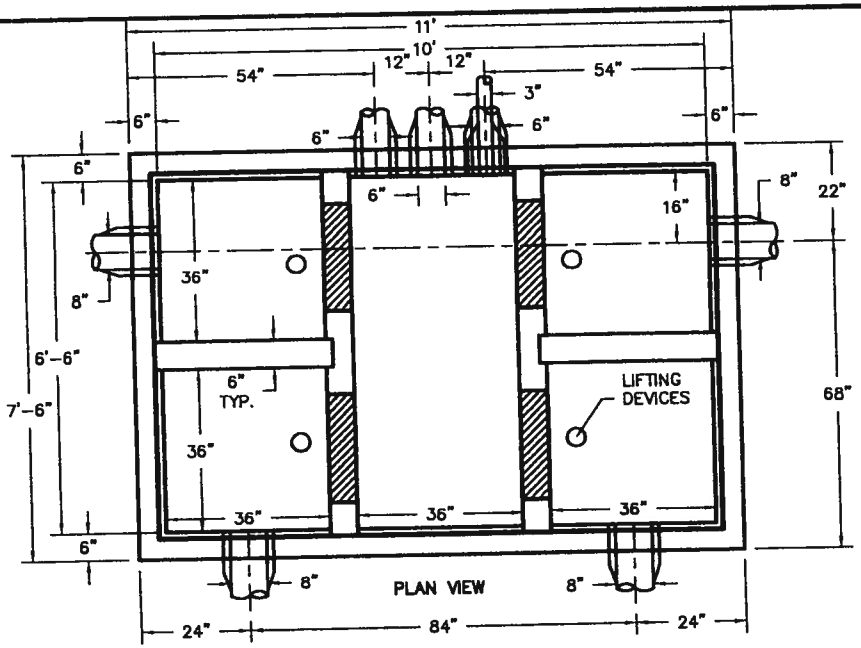
NOTES:

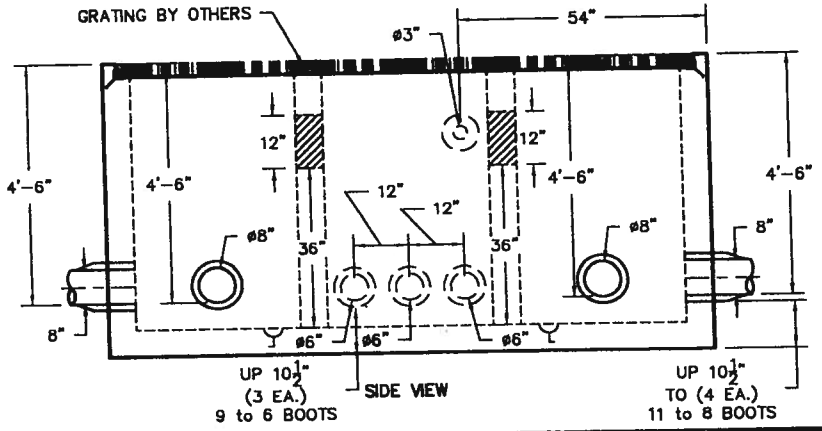
BOX SECTION – APPROX. 19,400 LBS.
(4 EA.) SLIDE IN WALLS – APPROX. 6,600 lbs.

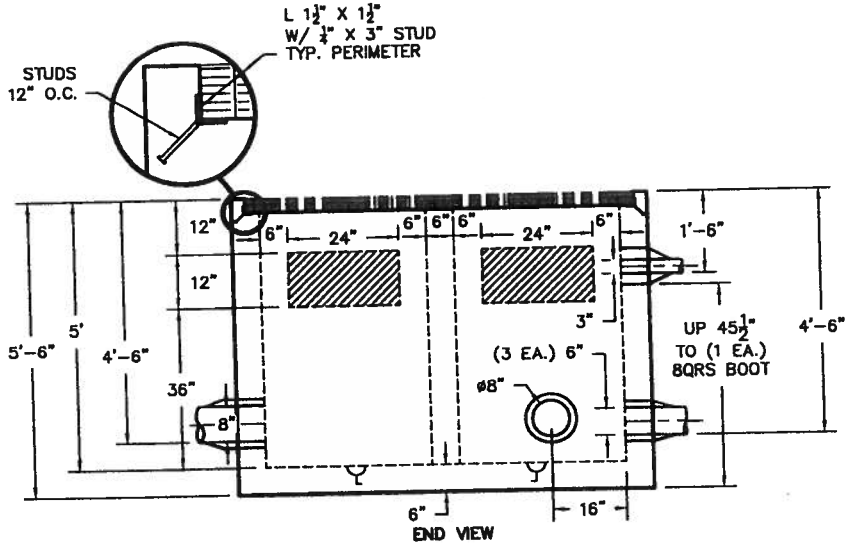
CONCRETE
– 28 DAY COMPRESSIVE F'C=5000 PSI.
– AIR ENTRAINED
REBAR
– ASTM A-615 GRADE 60.

ALL GRATING, WEIR GATES & DEFLECTOR PLATES TO BE SUPPLIED & INSTALLED BY OTHERS

EXTERIOR BITUMINOUS MASTIC COATING







DATE:
REV NO.
SCALE: 3/8" = 1'
DRAWN BY: SWT
DATE: 7/25/07
FILE: custom boxes 2007\Compass Environmental Wellsville, NY BP refinery

WIESER CONCRETE
W5716 US HWY10, MADISON ROCK, WI 54750
800-325-8456

COMPASS ENVIRONMENTAL
BP REFINERY
WELLSVILLE, NY
JERRY RESNIK, 419-427-2633

SHEET NO.
0 OF 0

COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/26/2007

WE ARE SENDING YOU

	Specifications	X	Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y____ N X___

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
014	01300, P2.2.1	Utility Abandon Plan	7/26/2007					

	For Review & Approval	X	For Your Use

Deviations: No deviations from the referenced Specification section.

REMARKS/NOTES

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

UTILITY ABANDONMENT PLAN

During the course of the execution of field activities underground utilities will be encountered. The existing site drawings identify several utilities in areas that will be excavated. In addition to the site drawings, all utility companies that have utilities in the area were contacted and confirmed the location of their respective underground utilities. Due to the nature and age of the facility where field activities are being performed, it is anticipated that unmarked, abandoned utilities will be encountered.

For utilities where the location is known, extreme care will be exercised during excavation activities. A ground spotter will be utilized. Existing utilities encountered will be shored, braced or otherwise protected to ensure their continued service during and immediately after intrusive activities in their areas. Relocation of existing utility services is not contemplated under the existing scope of work.

If any unmarked utilities are encountered, the Resident Engineer will be immediately contacted to assess the situation. It is anticipated that any unmarked utilities encountered will not be "live". These will be closed in place at the direction of the Resident Engineer.

SPILL RESPONSE

In the event that a "spill" results during the course of excavation activities work in that area will immediately stop. The Resident Engineer will be notified and measures to contain the spill i.e. placement of absorbent boom and/or pads, will be taken. Attempts to contain/stop the source of the spill will take place immediately. Once the situation has been stabilized it will be evaluated to ascertain the best course of action at that time.

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refiner
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/29/2007

New Submittal _____
Resubmittal X
Original Submittal # 008

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
015/008A	15500A, Para 2.2	HDPE, DR 11	7/29/2007						

Response Requested Y__X__N_____

X	For Review & Approval		For Your Use

DEVIATIONS: The interior diameters (ID) vary from the specifications by a few thousanths of an inch .
The material specifications contain additional test results not called out in the Project specifications.
The Mfg-Chevron differs from the one called out in the specifications.

REMARKS:

Copies To: Mike Valls
File

From: Jerry Resnik
Senior Project Manager

For more information and technical
assistance contact:

Performance Pipe, a division of
Chevron Phillips Chemical Company LP
P.O. Box 269006
Plano, TX 75026-9006
800.527.0662

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

DriscoPlex®
PE3608 / (PE3408) Pipe
Pipe and Fittings Data Sheet

Typical material Physical Properties of DriscoPlex® PE3608 / (PE3408)

High Density Polyethylene Materials

Property	Unit	Test Procedure	Typical Value
Material Designation	---	PPI TR-4	PE3608
Cell Classification	---	ASTM D3350	345464C
Pipe Properties			
Density	gms / cm^3	ASTM D1505	0.955 (black)
Melt Index Condition 190 / 2.16	gms / 10 minutes	ASTM D1238	0.08
Hydrostatic Design Basis 73°F (23°C)	psi	ASTM D2837	1600
Hydrostatic Design Basis 140°F (60°C)	psi	ASTM D2837	800
Color: UV Stabilizer [C] [E]	---	ASTM D3350	Min 2% carbon Black Color UV Stabilizer
Material Properties			
Flexural Modulus 2% Secant - 16:1 span; depth, 0.5 in / min	psi	ASTM D790	>110,000
Tensile Strength at Yield	psi	ASTM D638 Type IV	3200
Elongation at Break 2 in / min., Type IV bar	%	ASTM D638	>700
Elastic Modulus	psi	ASTM D638	>150,000
Hardness	Shore D	ASTM D2240	62
PENT	hrs	ASTM F1473	>100
Thermal Properties			
Vicat Softening Temperature	°F	ASTM D1525	256
Brittleness Temperature	°F	ASTM D746	-103
Thermal Expansion	in / in / °F	ASTM D696	1.0×10^{-4}

Another quality product from
Chevron Phillips
Chemical Company LP
The Woodlands, Texas

Before using the piping product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the piping product for the specific use in question and is further advised against relying on the information contained herein as it may relate to any specific use or application. It is the ultimate responsibility of the user to ensure that the piping product is suited and the information is applicable to the user's specific application. This data sheet provides typical physical property information for polyethylene resins used to manufacture the piping product. It is intended for comparing polyethylene piping resins. It is not a product specification, and it does not establish minimum or maximum values or manufacturing tolerances for resins or for the piping product. These typical physical property values were determined using compression-molded plaques prepared from resin. Values obtained from tests of specimens taken from the piping product can vary from these typical values. Performance Pipe does not make, and expressly disclaims, all warranties, of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, allegedly arising from any usage of trade or from any course of dealing in connection with the use of information contained herein or the piping product itself. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with th

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P.O. Box 269006
Plano, TX 75026-9006
800.527.0662

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

SUGGESTED INDUSTRIES AND APPLICATIONS

Potable Water Mains	Horizontal Directional Drilling (HDD)	Marine Service
Sliplining	Water transmission Lines	Pipe Bursting
Industrial Water Mains	Ash, Tailings & Abrasives	Mining
Municipal Water Utilities	Open-cut and Bury	Culverts
Rural Water Distribution	River Crossings	Plow-in
Mun. & ind. Sewer	Trenchless Technologies	Crude oil
Fire Main Piping	Rural Water Distribution	Plow-in

Butt Fusion Conditions

- 60-90 psig (4.14-6.21 bar) interfacial fusion pressure.
- 400-450° (204-232°C) heater surface temperature range.
- Please refer to Performance Pipe's PE3608 (PE3408) fusion procedure, Bulletin PP 750.

Available Sizes

- ¾" through 54" IPS
- 4" through 36" DIPS

Specification Data

The resin, pipe and fitting listed may comply with one or more of the standards below.

Applicable Standards	DriscoPlex® Pipe Series	PE3608 (PE3408)	PE4710 (d_f)
ASTM F714, NSF 61, ASTM D3035	4000, 4100, 4200, 4300, 4400, 4500, 4600, 4700	0.5	0.63
AWWA C906, AWWA C901	4000, 4100, 4200, 4300, 4400, 4500, 4600, 4700	0.5	0.63
FMA, AWWA, F714	1500, 1600	0.5	---
API 15LE, ASTM D2513	6400	0.5	0.63

Another quality product from
Chevron Phillips Chemical Company LP
The Woodlands, Texas

Before using the piping product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the piping product for the specific use in question and is further advised against relying on the information contained herein as it may relate to any specific use or application. It is the ultimate responsibility of the user to ensure that the piping product is suited and the information is applicable to the user's specific application. This data sheet provides typical physical property information for polyethylene resins used to manufacture the piping product. It is intended for comparing polyethylene piping resins. It is not a product specification, and it does not establish minimum or maximum values or manufacturing tolerances for resins or for the piping product. These typical physical property values were determined using compression-molded plaques prepared from resin. Values obtained from tests of specimens taken from the piping product can vary from these typical values. Performance Pipe does not make, and expressly disclaims, all warranties, of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, allegedly arising from any usage of trade or from any course of dealing in connection with the use of information contained herein or the piping product itself. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with th

For more information and technical assistance contact:

Performance Pipe, a division of
Chevron Phillips Chemical Company LP
P.O. Box 269006
Plano, TX 75026-9006
800.527.0662

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

Members Of: PLASTICS·PIPE·INSTITUTE

NOTICE: This data sheet provides typical physical property information for polyethylene resins used to manufacture PERFORMANCE PIPE polyethylene piping products. It is intended for comparing polyethylene piping resins. It is not a product specification, and it does not establish minimum or maximum values or manufacturing tolerances for resins or for piping products. Some of these typical physical property values were determined using compression molded plaques. Values obtained from tests of specimens taken from piping product can vary from these typical values. Performance Pipe has made every reasonable effort to ensure the accuracy of this data sheet, but this data sheet may not provide all necessary information, particularly with respect to special or unusual applications. The data sheet may be changed from time to time without notice. Contact Performance Pipe to determine if you have the most recent edition.

LEE SUPPLY CO. INC.
• DIVERSIFIED PIPE & PUMP SYSTEMS
• INDUSTRIAL • MINING • ENVIRONMENTAL PRODUCTS
• MUNICIPAL PRODUCTS
P.O. Box 35 Charleroi, PA 15022
Phone: 724-483-3543 FAX: 724-483-0577

Bulletin: PP 109
Revision Date September, 2006

Another quality product from
Chevron Phillips Chemical Company LP
The Woodlands, Texas

Before using the piping product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the piping product for the specific use in question and is further advised against relying on the information contained herein as it may relate to any specific use or application. It is the ultimate responsibility of the user to ensure that the piping product is suited and the information is applicable to the user's specific application. This data sheet provides typical physical property information for polyethylene resins used to manufacture the piping product. It is intended for comparing polyethylene piping resins. It is not a product specification, and it does not establish minimum or maximum values or manufacturing tolerances for resins or for the piping product. These typical physical property values were determined using compression-molded plaques prepared from resin. Values obtained from tests of specimens taken from the piping product can vary from these typical values. Performance Pipe does not make, and expressly disclaims, all warranties, of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, allegedly arising from any usage of trade or from any course of dealing in connection with the use of information contained herein or the piping product itself. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with th

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

LEE SUPPLY CO. INC.
• DIVERSIFIED PIPE & PUMP SYSTEMS
• INDUSTRIAL • MINING • ENVIRONMENTAL PRODUCTS
• MUNICIPAL PRODUCTS
P.O. Box 35 Charleroi, PA 15022
Phone: 724-483-3543 FAX: 724-483-0577

IPS Size and Dimension Data

PE3608 (PE3408)

DriscoPlex® Municipal & Industrial & Energy Series/IPS Pipe Data

Pressure Ratings are calculated using 0.50 design factor for HDS at 73°F as listed in PPI TR-4 for PE 3608 materials.
Temperature, Chemical, and Environmental use considerations may require use of additional design factors.

Pressure Rating		255 psi DR 7.3			200 psi DR 9.0			160 psi DR 11.0			130 psi DR 13.5			
IPS Pipe Size	Nominal OD (in)	Minimum Wall (in)	Average ID (in)	Weight (lbs/ft)	Minimum Wall (in)	Average ID (in)	Weight (lbs/ft)	Minimum Wall (in)	Average ID (in)	Weight (lbs/ft)	Minimum Wall (in)	Average ID (in)	Weight (lbs/ft)	IPS Pipe Size
1 1/4"	1.660	0.227	1.179	0.44	0.184	1.270	0.37	0.151	1.340	0.31	0.123	1.399	0.26	1 1/4"
1 1/2"	1.900	0.260	1.349	0.58	0.211	1.453	0.49	0.173	1.533	0.41	0.141	1.601	0.34	1 1/2"
2"	2.375	0.325	1.686	0.91	0.264	1.815	0.76	0.216	1.917	0.64	0.176	2.002	0.53	2"
3"	3.500	0.479	2.485	1.98	0.389	2.675	1.66	0.318	2.826	1.39	0.259	2.951	1.15	3"
4"	4.500	0.616	3.194	3.27	0.500	3.440	2.74	0.409	3.633	2.29	0.333	3.794	1.90	4"
6"	6.625	0.908	4.700	7.09	0.736	5.065	5.93	0.602	5.349	4.97	0.491	5.584	4.13	6"
8"	8.625	1.182	6.119	12.01	0.958	6.594	10.05	0.784	6.963	8.42	0.639	7.270	7.00	8"
10"	10.750	1.473	7.627	18.66	1.194	8.219	15.61	0.977	8.679	13.09	0.796	9.062	10.87	10"
12"	12.750	1.747	9.046	26.25	1.417	9.746	21.97	1.159	10.293	18.41	0.944	10.749	15.29	12"
14"	14.000	1.918	9.934	31.64	1.556	10.701	26.50	1.273	11.301	22.20	1.037	11.802	18.44	14"
16"	16.000	2.192	11.353	41.33	1.778	12.231	34.60	1.455	12.915	29.00	1.185	13.488	24.09	16"
18"	18.000	2.466	12.772	52.31	2.000	13.760	43.79	1.636	14.532	36.69	1.333	15.174	30.48	18"
20"	20.000	2.740	14.191	64.58	2.222	15.289	54.05	1.818	16.146	45.30	1.481	16.860	37.63	20"
22"	22.000	3.014	15.610	78.14	2.444	16.819	65.40	2.000	17.760	54.82	1.630	18.544	45.56	22"
24"	24.000	3.288	17.029	93.00	2.667	18.348	77.85	2.182	19.374	65.24	1.778	20.231	54.21	24"
26"	26.000				2.889	19.875	91.36	2.364	20.988	76.57	1.926	21.917	63.62	26"
28"	28.000				3.111	21.405	105.95	2.545	22.605	88.78	2.074	23.603	73.78	28"
30"	30.000				3.333	22.934	121.62	2.727	24.219	101.92	2.222	25.269	84.69	30"
32"	32.000							2.909	25.833	115.97	2.370	26.976	96.35	32"
34"	34.000							3.091	27.447	130.93	2.519	28.660	108.81	34"
36"	36.000							3.273	29.061	146.80	2.667	30.346	121.98	36"
42"	42.000										3.111	35.405	166.00	42"
48"	48.000													48"
54"	54.000													54"

Pipe weights are calculated in accordance with PPI TR-7. Average inside diameter is calculated using nomnal OD and Minimum wall plus 6% for use in estimating fluid flows. Actual ID will vary. When designing components to fit the pipe ID, refer to pipe dimensions and tolerances in the applicable pipe manufacturing specification.

September 2006 Supercedes all previous publications
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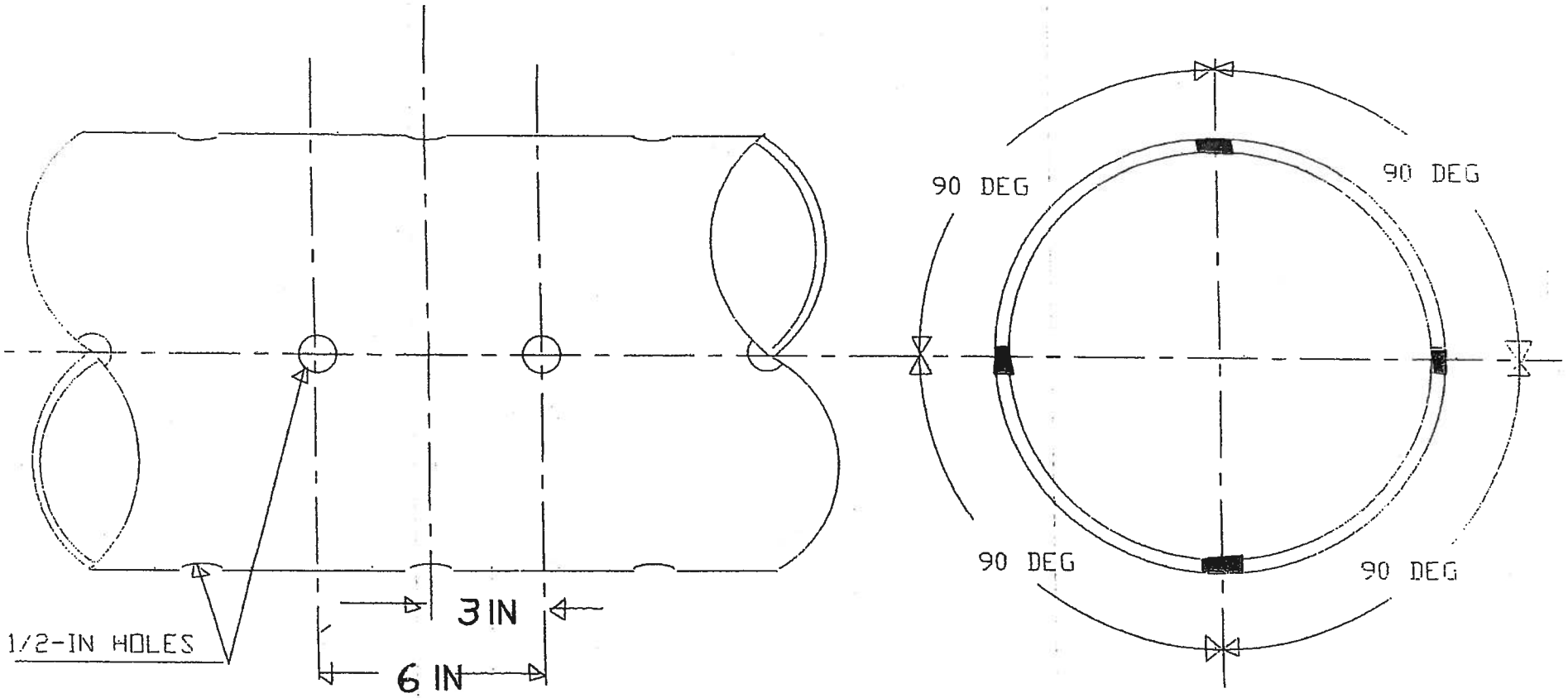


SHOP SKETCH - NOT TO SCALE

PERFORATION PATTERN:	4 ROWS AT 90 DEGREES APART **6-IN CENTERS** 1/2-IN HOLES STAGGERED	LEE SUPPLY COMPANY INC FIRST & LINCOLN AVE CHARLEROI, PA 15022 **DRAWING NBR: 4129012S**

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refine
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 7/30/2007

New Submittal X
Resubmittal
Original Submittal #

WE ARE SENDING YOU

	Specifications		Plans		Invoice
X	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
016	05540A, P 2.1A	Bilco Hatches	7/30/2007						

Response Requested Y____N__X____

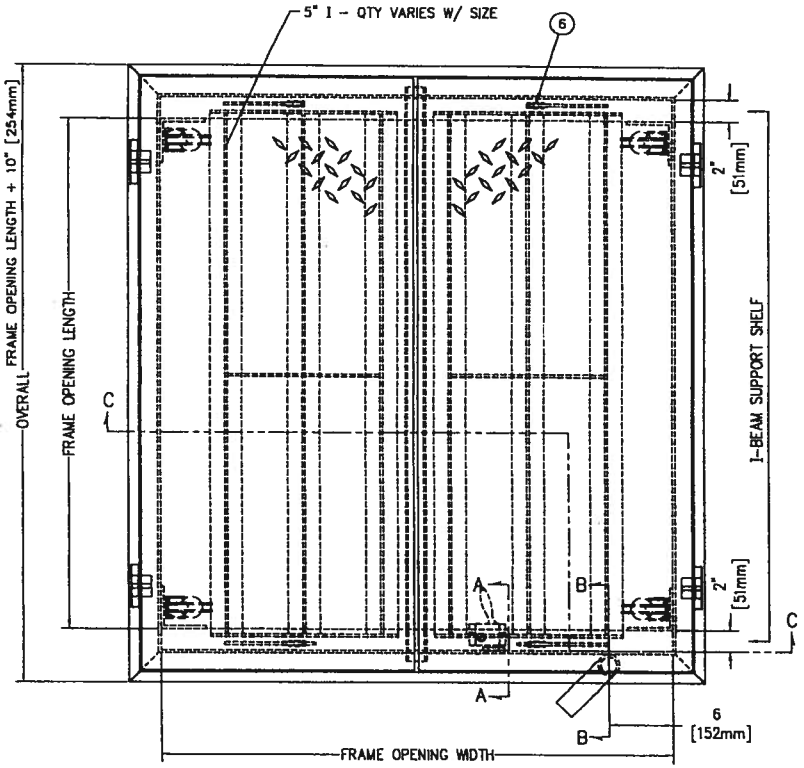
	For Review & Approval	X	For Your Use

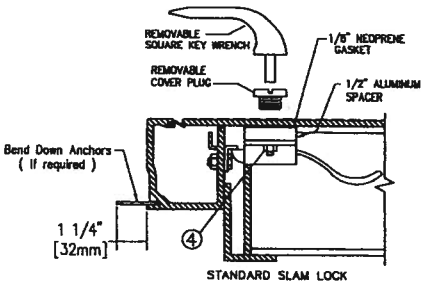
DEVIATIONS: No deviations from the specification referenced.

REMARKS:

Copies To: Terry LeMasters
File

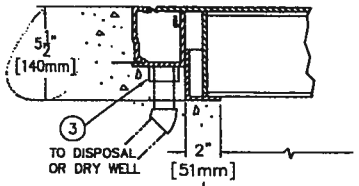
From: Jerry Resnik
Senior Project Manager





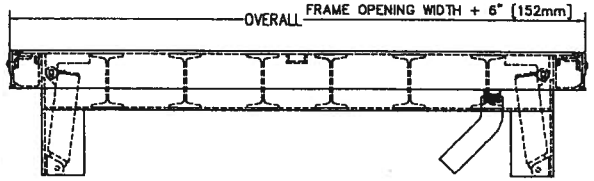
SECTION A–A

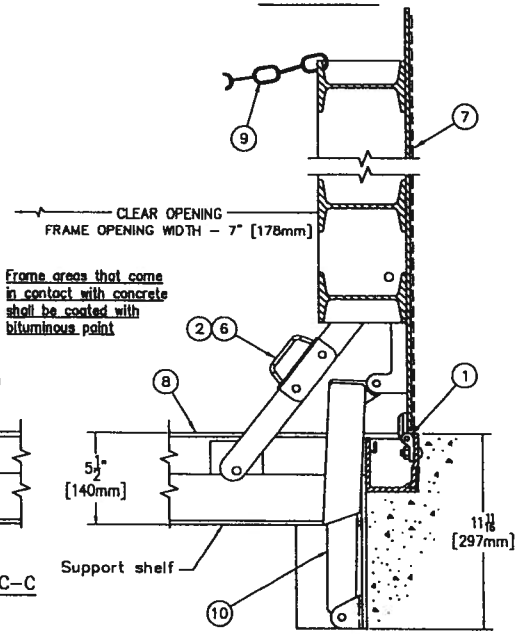
NOTE:
DESIGNED TO WITHSTAND H–20 WHEEL LOADINGS SUITABLE FOR USE IN OFF–STREET LOCATIONS WHERE NOT SUBJECTED TO HIGH DENSITY TRAFFIC

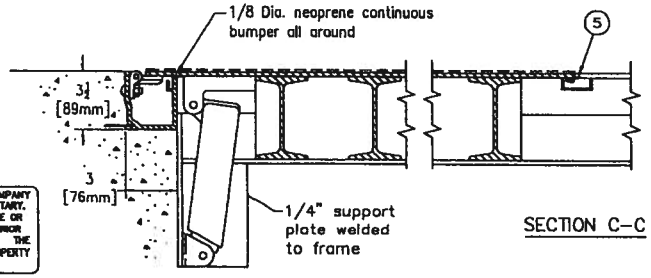


CHANNEL SUPPORT SHELF MUST BE SUPPORTED BY CONCRETE OR STEEL TO CARRY H–20 LOADING

SECTION B–B







SECTION C–C

SPECIFICATIONS

1. Bilco heavy duty forged aluminum hinges with stainless steel pins
2. Bilco automatic hold open arm
3. 1–1/2" drain coupling
4. Standard slam lock
5. Continuous EPDM debris gasket
6. Guide arm
7. 1/4" aluminum diamond pattern plate cover
8. Bilco 1/4" aluminum channel frame with recessed anchors
9. Heavy duty check chain
10. Lifting mechanism with reinforced composite tubes and electrocoated compression springs

SHOP FINISH:
ALUMINUM: MILL FINISH
HARDWARE: CORROSION RESISTANT
(unless otherwise specified)

REINFORCED FOR H20 LOADING

INSTALLER NOTES:

A. Use caution. Cover is spring loaded. Do not remove safety shipping bolt until unit is to be installed and in normal horizontal operating position.
B. Be sure unit is set on slight pitch toward drain corner.
C. Before anchoring in place open and close door. Check to see that the door in the closed position rests on the frame all around. If not, shim under the frame at the proper corner.
D. Do not reduce 1 1/2" drain pipe to dry well or disposal system.
E. Bend down anchors if required

Customer:

P.O. N°

Job:

Sales Rep:

Manufacturers of Doors for Special Services
THE BILCO COMPANY
New Haven, Connecticut 06505

DOUBLE LEAF ACCESS DOOR
TYPE JD-ALH20 - EXTERIOR

QTY	TYPE	SIZE WIDTH x LENGTH
	JD-1ALH20	4'-0" x 2'-6" [1220mm] x [762mm]
	JD-2ALH20	4'-0" x 4'-0" [1220mm] x [1220mm]
	JD-3ALH20	4'-0" x 6'-0" [1220mm] x [1830mm]
	JD-4ALH20	5'-0" x 5'-0" [1525mm] x [1525mm]

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COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 7/31/2007

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

WE ARE SENDING YOU

	Specifications		Plans		Invoice
X	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y X N

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
017-013A	03400A, Para 1.4A	Splitter Structure Dwgs	7/31/2007					

X For Review & Approval

For Your Use

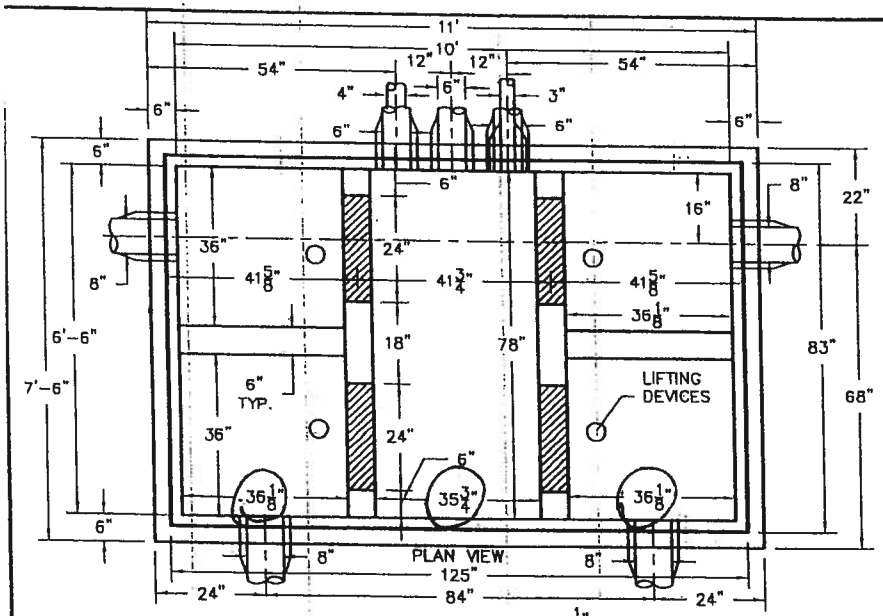
Deviations: No deviations from the referenced dwg. Note: additional information, not shown on the drawing is included.

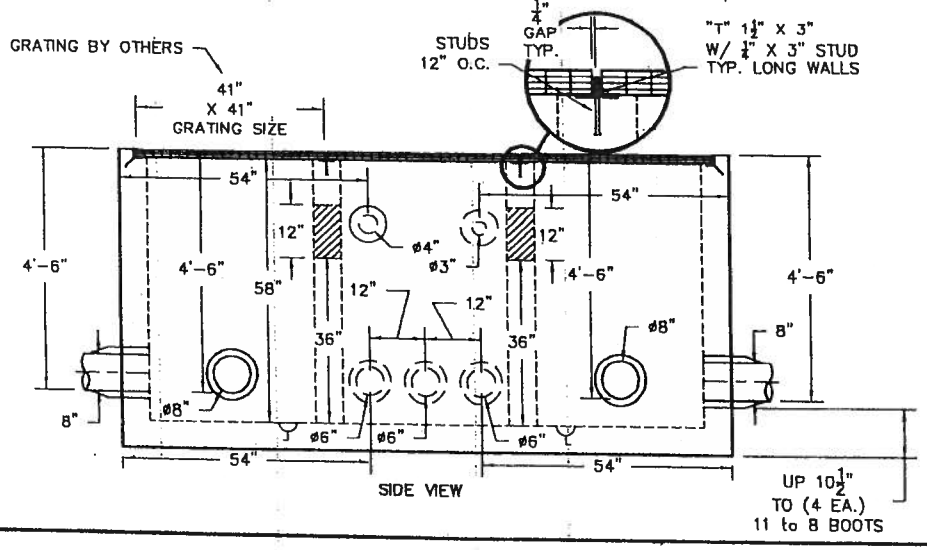
REMARKS/NOTES The Specification requirement for installation instructions is N/A
This is a resubmitall of 013.

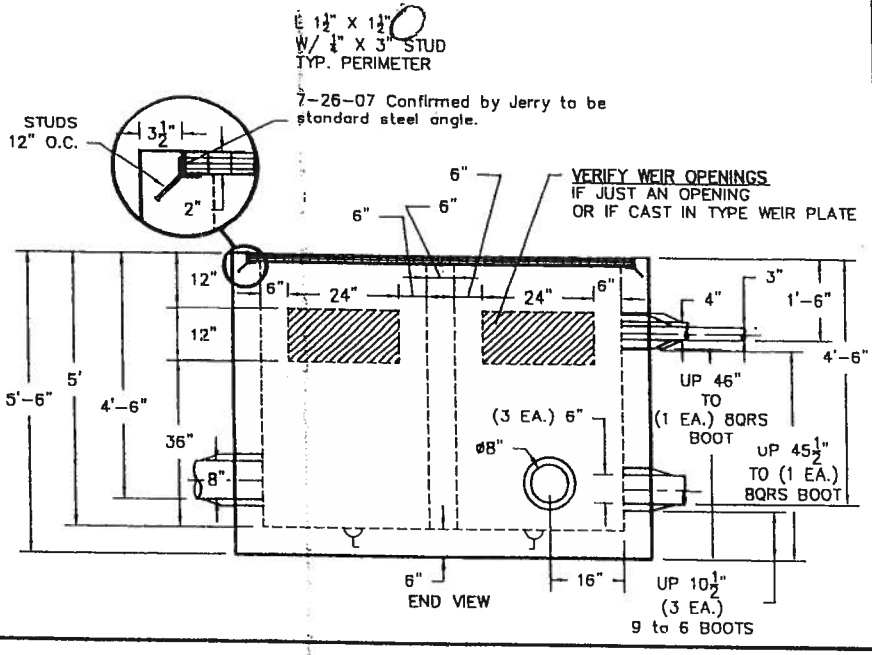
Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

(1 EA.) CASCADE AERATOR SPLITTER







NOTES:

BOX SECTION W/ WALLS – APPROX. 26,000 LBS.

CONCRETE
- 28 DAY COMPRESSIVE F'C=5000 PSI.
- AIR ENTRAINED

REBAR
- ASTM A-615 GRADE 60.

ALL GRATING, WEIR GATES & DEFLECTOR PLATES TO BE SUPPLIED & INSTALLED BY OTHERS

EXTERIOR BITUMINOUS MASTIC COATING

REV NO.	DATE:
NO. 3	7/31/07
NO. 4	7/31/07

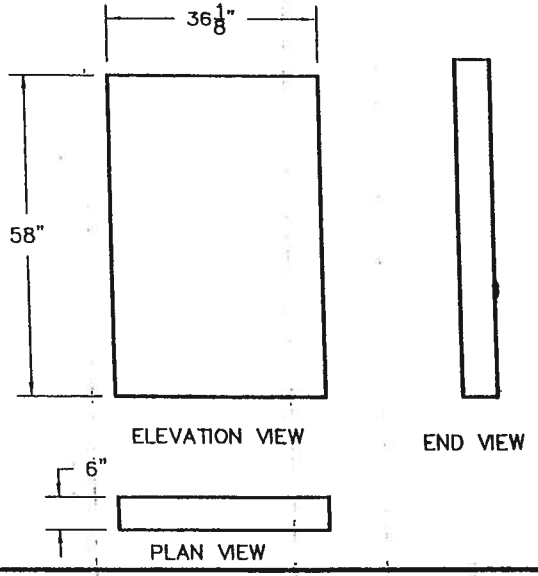
SCALE: 3/8" = 1'
DRAWN BY: SWT
DATE: 7/25/07
FILE: custom boxes 2007\Compass Environmental Wellsville, NY BP refinery

WIESER CONCRETE
W3716 US HWY10, MAIDEN ROCK, WI 54750
800-325-8456

COMPASS ENVIRONMENTAL
BP REFINERY
WELLSVILLE, NY
JERRY RESNIK, 419-427-2633

SHEET NO. 1 OF 2

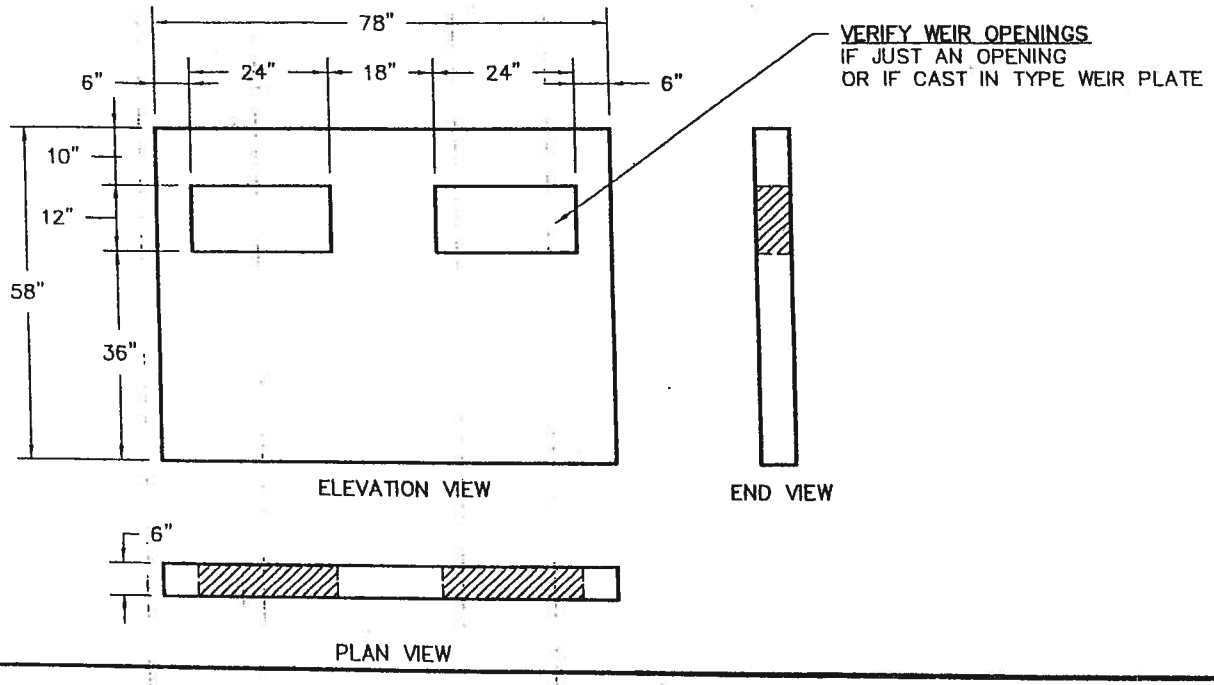
(2 EA.) SHORT DIVIDER WALLS



(1 EA.) CASCADE AERATOR SPLITTER WALL LAYOUT

NOTES:
USE WALL DRAWINGS FOR SETUP.
CAST WALLS TO MAKE ONE UNIT.

(2 EA.) LONG DIVIDER WALLS



REV NO.	DATE:

SCALE: 3/8" = 1'
DRAWN BY: SWT
DATE: 7/31/07
FILE: custom boxes 2007\Compass Environmental Wellsville, NY BP refinery

WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750
800-325-8456

COMPASS ENVIRONMENTAL
BP REFINERY
WELLSVILLE, NY
JERRY RESNIK, 419-427-2633

SHEET NO.
0 OF 0

COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 8/1/2007

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y__X__ N_____

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
018-003A	02210A	Trench geotextile	8/31/2007					

X For Review & Approval ☐ For Your Use

Deviations: The Trevira product specified is no longer manufactured. We believe this product most closely matches the discontinued Trevira prc

REMARKS/NOTES
The Specification requirement for installation instructions is N/A
This is a resubmitall of 013.

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

PRODUCT DATA SHEET

GEOTEX® 351

GEOTEX 351 is a polypropylene, staple fiber, needlepunched nonwoven geotextile produced by Propex, and will meet the following Minimum Average Roll Values (MARV) when tested in accordance with the methods listed below. The fibers are needled to form a stable network that retains dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

GEOTEX 351 conforms to the property values listed below.[1] Propex performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute - Laboratory Accreditation Program (GAI-LAP).

PROPERTY	TEST METHOD	MARV[2] ENGLISH	MARV[2] METRIC
Mechanical			
Grab Tensile Strength	ASTM D-4632	95 lbs	423 N
Grab Elongation	ASTM D-4632	50%	50%
Puncture Strength	ASTM D-4833	55 lbs	245 N
Mullen Burst	ASTM D-3786	185 psi	1275 kPa
Trapezoidal Tear	ASTM D-4533	40 lbs	178 N
Endurance			
UV Resistance	ASTM D-4355	70%	70%
Hydraulic			
Apparent Opening Size (AOS)[3]	ASTM D-4751	50 US Std. Sieve	0.300 mm
Permittivity	ASTM D-4491	2.00 sec^{-1}	2.00 sec^{-1}
Water Flow Rate	ASTM D-4491	150 gpm/ft^2	6112 $l/min/m^2$
Roll Sizes		12.5 ft x 360 ft 15 ft x 360 ft	3.81 m x 109.8 m 4.57 m x 109.8 m

NOTES:
1. The property values listed above are effective 08/2006 and are subject to change without notice.
2. Values shown are in weaker principal direction. Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.
3. Maximum average roll value.

PROPEX GEOSYNTHETICS | THE ADVANTAGE CREATORS.™

Propex Inc.
6025 Lee Highway, Suite 425
PO Box 22788
Chattanooga, TN 37422

PH: 423 899 0444
PH: 800 621 1273
FAX: 423 899 7619
www.geotextile.com

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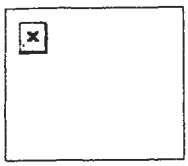


Geotextile Product Data- Hoechst Celanese Corp.

Property	Trevira 011/120	Trevira 011/140	Trevira 011/200	Trevira 011/250	Trevira 011/280
Mass Per Unit g/m2 (oz/yd2)	112 (3.3)	136 (4.0)	193 (5.7)	241 (7.1)	271 (8.0)
Structure	NW	NW	NW	NW	NW
Polymer Composition	PET	PET	PET	PET	PET
% Open Area CWO-22125	NA	NA	NA	NA	NA
AOS ASTM D4491-87 mm (U.S. Seive)	0.300 (50)	0.300 (50)	0.210 (70)	0.210 (70)	0.210 (70)
Permittivity ASTM D4491-92 sec-1/Flow Rate l/min/m2 (gal/min/ft2)	2.07/105 (155)	2.01/102 (150)	1.74/88 (130)	1.47/75 (110)	1.20/61 (90)
Puncture ASTM D 4833-88 kN (lb)	0.200 (45)	0.222 (50)	0.356 (80)	0.423 (95)	0.444 (100)
Mullen Burst ASTM D 3786-87 kPa (psi)	1173 (170)	1311 (190)	1965 (285)	2484 (360)	2622 (380)
Trapezoid Tear Strength ASTM D 4533-91 kN (lb)	0.133 (30)	0.178 (40)	0.267 (60)	0.334 (75)	0.356 (80)
Grab/Tensile Elongation ASTM D 4632-91 kN (lb)%	0.400 (90) 60	0.489 (110) 60	0.711 (160) 60	0.933 (210) 60	1.023 (230) 60
Wide With Tensile Elongation ASTM D 4595-86 kN/m (lb/in)					
MD	9.0(51.1) 76.1(A)	10.9(62.1) 69.6	14.4(82.5) 68.6	17.1(97.6) 65.0	18.3(104.6) 68.1
XD	6.4(36.6) 82.2(A)	7.4(42) 70.4	7.4(42) 70.4	14.8(84.6) 75.0	18.8(107.5) 72.1
Manufacturer's	F,D,A/O	F,D,E,A/O	F,D,E,S/S	F,D,E,S/S	F,D,E,S/S,P

Suggested Applications						

W =Woven
NW =Nonwoven
O/C =Other or combination
Pet =Polyester
PP =Polypropylene
PE =Polythylene
S/S =Separation/stabilization
R =Reinforcement
F =Filtration

D =Drainage
P =Protection
E =Erosion Control
A/O =Asphalt Overlay
S/F =Silt Fence
NA =Manufacturer determined that this data was not appilicable to the product or the data was unavailable
NP =Data not provided by manufacturer

Geotextile Product Data- Hoechst Celanese Corp. cont.

Property	Trevira 011/350	Trevira 011/420	Trevira 011/450	Trevira 011/550	Trevira ProEarth
Mass Per Unit g/m2 (oz/yd2)	339(10)	406(12)	441(13)	542(16)	140-550 (4-16)
Structure	NW	NW	NW	NW	W
Polymer Composition	PET	PET	PET	PET	PP
% Open Area CWO-22125	NA	NA	NA	NA	NA
AOS ASTM D4491-87 mm (U.S. Seive)	0.210 (70)	0.210 (70)	0.149 (100)	0.149 (100)	NA
Permittivity ASTM D4491-92 sec-1/Flow Rate l/min/m2 (gal/min/ft2)	1.07/54 (80)	0.87/44 (65)	0.80/40 (60)	0.53/27 (40)	NA
Puncture ASTM D 4833-88 kN (lb)	0.578 (130)	0.667 (130)	0.689 (155)	0.867 (195)	NA
Mullen Burst ASTM D 3786-87 kPa (psi)	3519 (510)	3795 (550)	4416 (640)	5382 (780)	NA
Trapezoid Tear Strength ASTM D 4533-91 kN (lb)	0.444 (100)	0.534 (120)	0.578 (130)	0.667 (150)	NA
Grab/Tensile Elongation ASTM D 4632-91 kN (lb)%	1.356 (305) 60	1.556(350) 60	1.734(390) 65	2.224(500) 70	NA
Wide With					

Tensile Elongation ASTM D 4595-86 kN/m (lb/in) MD	26.8 (152.9)	NA	32.1 (183.5)	36.0 (205.5)	NA
XD	74.2 25.5 (134.1) 73.8	NA	77.6 27.6 (157.6) 80.4	81.6 28.8 (164.7) 77.2	NA
Manufacturer's Suggested Applications	R,F,P,E, S/S	R,P,S/S	R,P,S/S	R,P,S/S	F,P,D,E, S/S

W =Woven
NW =Nonwoven
O/C =Other or combination
Pet =Polyester
PP =Polypropylene
PE =Polythylene
S/S =Separation/stabilization
R =Reinforcement
F =Filtration

D =Drainage
P =Protection
E =Erosion Control
A/O =Asphalt Overlay
S/F =Silt Fence
NA =Manufacturer determined that this data was not appilicable to the product or the data was unavailable
NP =Data not provided by manufacturer

Geotextile Product Data- Contech Construction Products Inc. cont.

Property	C300	C70/06
Mass Per Unit g/m2 (oz/yd2)	NA	NA
Structure	W	W mono- filament
Polymer Composition	PP	PP
% Open Area CWO-22125	NA	4.00
AOS ASTM D4491-87 mm (U.S. Seive)	0.60 (30)	0.212 (70)
Permittivity ASTM D4491-92 sec-1/Flow Rate l/min/m2 (gal/min/ft2)	0.06/203 (5)	0.28/732 (18)
Puncture ASTM D 4833-88 kN (lb)	0.533 (120)	0.667 (150)
Mullen Burst ASTM D 3786-87 kPa (psi)	4134 (600)	3307 (480)

Trapezoid Tear Strength ASTM D 4533-91 kN (lb)	0.53 X 0.53 (120 X 120)	0.42 X 0.24 (95 X 55)
Grab/Tensile Elongation ASTM D 4632-91 kN (lb)%	1.33 X 1.33/15 (300 X 300)/15	1.76 X 1.16/24 (395 X 260)/24
Wide With Tensile Elongation ASTM D 4595-86 kN/m (lb/in)		
MD	30.6(175)	NA
XD	30.6(175)	NA
Manufacturer's Suggested Applications	SS,O/C,R	SS,O/C,F, D,E

W =Woven
NW =Nonwoven
O/C =Other or combination
Pet =Polyester
PP =Polypropylene
PE =Polythylene
S/S =Separation/stabilization
R =Reinforcement
F =Filtration

D =Drainage
P =Protection
E =Erosion Control
A/O =Asphalt Overlay
S/F =Silt Fence
NA =Manufacturer determined that this data was not appilicable to the product or the data was unavailable
NP =Data not provided by manufacturer

COMPASS ENVIRONMENTAL, INC.

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 8/1/2007

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports	X	Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y X N

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
019	02661, P1.4	Sed Pond Liner	8/1/2007					

X For Review & Approval For Your Use

Deviations: Numerous with details attached

REMARKS/NOTES
The Specification requirement for installation instructions is N/A
This is a resubmitall of 013.

From: Jerry Resnik
Senior Project Manager

Copies To: Mike Vails
File

From: Mark Tilley [mailto:mark@landsaver.net]
Sent: Wednesday, August 01, 2007 11:23 AM
To: Terry LeMasters
Subject: RE: email address Here you go.

Upon review of the geomembrane specifications received for the above project: Section 02661

Items: 80 HDPE smooth, TEXTURED

Tables 1 & 2, pages 02661-9 & 10

- The +10% thickness requirement should be removed from this specification, as a positive tolerance is not listed in the GRI GM13 & 17 Standards.
- Liner Manufacturer's testing for Density on raw material and finished liner will be tested via ASTM D792 Method B, not Method A or D1505 as listed. Both of these density methods are acceptable per the GRI GM13&17 Standards, and Method B is the recommended method for D792.
- ASTM D638 is covered in the Plastics Division of ASTM (D20). In 2004, they set a requirement that an extensometer is needed to measure elongation at yield & break. At that time, ASTM Committee D35 on Geosynthetics promulgated ASTM D6693 as a replacement for this method. ASTM D6693 does not require an extensometer, and elongation at yield & break are calculated from crosshead movement. The rationale for this is that there is no slippage in the grips, and the dog-bone shaped specimen limits the elongation to the thin section of the specimen. ASTM D6693 is also the only Tensile method listed in the GRI GM13 & 17 Standards.
- Environmental Stress Crack Resistance ASTM D1693 is no longer performed by Agru America, as it is not listed as necessary by the GRI GM13&17 Standards. Agru America can issue a letter of certification for this result, and an approval from GRI of this certification. Agru America performs ASTM D5397-Appendix-Single Point NCTL Testing in normal MQC for Stress Crack (for HDPE ONLY).
- Water Absorption D570 is not tested by Agru America on a routine MQC basis, and is not listed as needed by the GRI GM13 & 17 Standard. Agru America can provide a letter of certification that the material to be supplied will meet or exceed the required values in the specification. If this testing is required, additional costs will be incurred.
- Volatile Loss ASTM D1203 is not tested by Agru America on a routine MQC basis, as it is not listed as required in the GRI GM13 & 17. Agru America can provide a letter of certification that the material to be supplied will meet or exceed the required values in the specification. If this testing is required, additional costs will be incurred.
- Carbon Black Content will be tested via ASTM D4218, not D1603 as listed. Both of these Carbon Content methods are listed as acceptable in the GRI GM13& 17 Standards.
- Requirements for Carbon Black Dispersion ASTM D5596 are not given. Requirements listed are for ASTM D3015. Please amend to D5596 values.

Please regard this email as a formal request to amend the geomembrane (1)properties, (2)methods (including alternates & ALL notes), (3)values (with the exception of textured thickness, which should remain 60mil min ave, 54mil min individual), and (4)test frequencies to those listed in the latest revision of the GRI GM13 Standard. If this specification is amended as such, no additional costs will be incurred.

- **Elongation at Yield will be reported to 2 decimal places.**
- **Attached is a Low Temperature Brittleness result showing that we can attain -77°C. Usually LTB is tested per resin lot to -60°C.**
- **Dimensional Stability is tested per resin lot, and reported on the roll certs.**
- **Per the specs, we will test NCTl to 400 hours.**

A copy of the latest revision of the GRI GM13 Standard is attached.

Grant Palmer
Quality Control Manager, Agru America
500 Garrison Road, Georgetown, SC 29440
Ph: (843) 546-0600 Ext 1014
Toll Free: (800) 373-2478(AGRU)
mobile (843) 240-1379

fax: (843) 527-273

GEOMEMBRANE TEST RESULTS

TRI Client: Agru America

Material: Smooth Geomembrane
Sample Identification: MM191249
TRI Log #: E2217-40-07

PARAMETER	TEST REPLICATE NUMBER										MEAN
Low Temperature Brittleness (ASTM D 746, NSF 54, -77C)	1	2	3	4	5	6	7	8	9	10	
MD (Pass/Pass)	Pass	Pass	Pass	Pass	Pass						100
TD (Pass/Pass)	Pass	Pass	Pass	Pass	Pass						100

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

Geosynthetic Research Institute
475 Kedron Avenue
Folsom, PA 19033-1208 USA
TEL (610) 522-8440
FAX (610) 522-8441

Revision 8: July 10, 2006
Revision schedule on pg. 11

GRI Test Method GM13*

Standard Specification for

"Test Methods, Test Properties and Testing Frequency for
High Density Polyethylene (HDPE) Smooth and Textured Geomembranes"

This specification was developed by the Geosynthetic Research Institute (GRI), with the cooperation of the member organizations for general use by the public. It is completely optional in this regard and can be superseded by other existing or new specifications on the subject matter in whole or in part. Neither GRI, the Geosynthetic Institute, nor any of its related institutes, warrant or indemnifies any materials produced according to this specification either at this time or in the future.

1. Scope

1.1 This specification covers high density polyethylene (HDPE) geomembranes with a formulated sheet density of 0.940 g/ml, or higher, in the thickness range of 0.75 mm (30 mils) to 3.0 mm (120 mils). Both smooth and textured geomembrane surfaces are included.

1.2 This specification sets forth a set of minimum, physical, mechanical and chemical properties that must be met, or exceeded by the geomembrane being manufactured. In a few cases a range is specified.

1.3 In the context of quality systems and management, this specification represents manufacturing quality control (MQC).

Note 1: Manufacturing quality control represents those actions taken by a manufacturer to ensure that the product represents the stated objective and properties set forth in this specification.

1.4 This standard specification is intended to ensure good quality and performance of HDPE geomembranes in general applications, but is possibly not adequate for the complete specification in a specific situation. Additional tests, or more restrictive

*This GRI standard is developed by the Geosynthetic Research Institute through consultation and review by the member organizations. This specification will be reviewed at least every 2-years, or on an as-required basis. In this regard it is subject to change at any time. The most recent revision date is the effective version.

values for test indicated, may be necessary under conditions of a particular application.

Note 2: For information on installation techniques, users of this standard are referred to the geosynthetics literature, which is abundant on the subject.

2. Referenced Documents

2.1 ASTM Standards

D 792 Specific Gravity (Relative Density) and Density of Plastics by Displacement
D 1004 Test Method for Initial Tear Resistance of Plastics Film and Sheeting
D 1238 Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer
D 1505 Test Method for Density of Plastics by the Density-Gradient Technique
D 1603 Test Method for Carbon Black in Olefin Plastics
D 3895 Test Method for Oxidative Induction Time of Polyolefins by Thermal Analysis
D 4218 Test Method for Determination of Carbon Black Content in Polyethylene Compounds by the Muffle-Furnace Technique
D 4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products
D 5199 Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes
D 5397 Procedure to Perform a Single Point Notched Constant Tensile Load – (SP-NCTL) Test: Appendix
D 5596 Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
D 5721 Practice for Air-Oven Aging of Polyolefin Geomembranes
D 5885 Test method for Oxidative Induction Time of Polyolefin Geosynthetics by High Pressure Differential Scanning Calorimetry
D 5994 Test Method for Measuring the Core Thickness of Textured Geomembranes
D 6693 Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes

2.2 GRI Standards

GM10 Specification for the Stress Crack Resistance of Geomembrane Sheet
GM 11 Accelerated Weathering of Geomembranes using a Fluorescent UVA-Condensation Exposure Device
GM 12 Measurement of the Asperity Height of Textured Geomembranes Using a Depth Gage

2.3 U. S. Environmental Protection Agency Technical Guidance Document "Quality Control Assurance and Quality Control for Waste Containment Facilities," EPA/600/R-93/182, September 1993, 305 pgs.

3. Definitions

Manufacturing Quality Control (MQC) - A planned system of inspections that is used to directly monitor and control the manufacture of a material which is factory originated. MQC is normally performed by the manufacturer of geosynthetic materials and is necessary to ensure minimum (or maximum) specified values in the manufactured product. MQC refers to measures taken by the manufacturer to determine compliance with the requirements for materials and workmanship as stated in certification documents and contract specifications.
ref. EPA/600/R-93/182

Manufacturing Quality Assurance (MQA) - A planned system of activities that provides assurance that the materials were constructed as specified in the certification documents and contract specifications. MQA includes manufacturing facility inspections, verifications, audits and evaluation of the raw materials (resins and additives) and geosynthetic products to assess the quality of the manufactured materials. MQA refers to measures taken by the MQA organization to determine if the manufacturer is in compliance with the product certification and contract specifications for the project.
ref. EPA/600/R-93/182

Formulation, n - The mixture of a unique combination of ingredients identified by type, properties and quantity. For HDPE polyethylene geomembranes, a formulation is defined as the exact percentages and types of resin(s), additives and carbon black.

4. Material Classification and Formulation

4.1 This specification covers high density polyethylene geomembranes with a formulated sheet density of 0.940 g/ml, or higher. Density can be measured by ASTM D1505 or ASTM D792. If the latter, Method B is recommended.

4.2 The polyethylene resin from which the geomembrane is made will generally be in the density range of 0.932 g/ml or higher, and have a melt index value per ASTM D1238 of less than 1.0 g/10 min.

4.3 The resin shall be virgin material with no more than 10% rework. If rework is used, it must be a similar HDPE as the parent material.

4.4 No post consumer resin (PCR) of any type shall be added to the formulation.

5. Physical, Mechanical and Chemical Property Requirements

5.1 The geomembrane shall conform to the test property requirements prescribed in Tables 1 and 2. Table 1 is for smooth HDPE geomembranes and Table 2 is for single and double sided textured HDPE geomembranes. Each of the tables are given in English and SI (metric) units. The conversion from English to SI (metric) is soft.

Note 3: The tensile strength properties in this specification were originally based on ASTM D 638 which uses a laboratory testing temperature of 23°C ± 2°C. Since ASTM Committee D35 on Geosynthetics adopted ASTM D 6693 (in place of D 638), this GRI Specification followed accordingly. The difference is that D 6693 uses a testing temperature of 21°C ± 2°C. The numeric values of strength and elongation were not changed in this specification. If a dispute arises in this regard, the original temperature of 23°C ± 2°C should be utilized for testing purposes.

Note 4: There are several tests often included in other HDPE specifications which are omitted from this standard because they are outdated, irrelevant or generate information that is not necessary to evaluate on a routine MQC basis. The following tests have been purposely omitted:

- Volatile Loss
- Dimensional Stability
- Coeff. of Linear Expansion
- Resistance to Soil Burial
- Low Temperature Impact
- ESCR Test (D 1693)
- Wide Width Tensile
- Water Vapor Transmission
- Water Absorption
- Ozone Resistance
- Modulus of Elasticity
- Hydrostatic Resistance
- Tensile Impact
- Field Seam Strength
- Multi-Axial Burst
- Various Toxicity Tests

Note 5: There are several tests which are included in this standard (that are not customarily required in other HDPE specifications) because they are relevant and important in the context of current manufacturing processes. The following tests have been purposely added:

- Oxidative Induction Time
- Oven Aging
- Ultraviolet Resistance
- Asperity Height of Textured Sheet (see Note 6)

Note 6: The minimum average value of asperity height does not represent an expected value of interface shear strength. Shear strength

associated with geomembranes is both site-specific and product-specific and should be determined by direct shear testing using ASTM D5321/ASTM D6243 as prescribed. This testing should be included in the particular site's CQA conformance testing protocol for the geosynthetic materials involved, or formally waived by the Design Engineer, with concurrence from the Owner prior to the deployment of the geosynthetic materials.

Note 7: There are other tests in this standard, focused on a particular property, which are updated to current standards. The following are in this category:

- Thickness of Textured Sheet
- Puncture Resistance
- Stress Crack Resistance
- Carbon Black Dispersion (In the viewing and subsequent quantitative interpretation of ASTM D 5596 only near spherical agglomerates shall be included in the assessment).

Note 8: There are several GRI tests currently included in this standard. Since these topics are not covered in ASTM standards, this is necessary. They are the following:

- UV Fluorescent Light Exposure
- Asperity Height Measurement

5.2 The values listed in the tables of this specification are to be interpreted according to the designated test method. In this respect they are neither minimum average roll values (MARV) nor maximum average roll values (MaxARV).

5.3 The properties of the HDPE geomembrane shall be tested at the minimum frequencies shown in Tables 1 and 2. If the specific manufacturer's quality control guide is more stringent and is certified accordingly, it must be followed in like manner.

Note 9: This specification is focused on manufacturing quality control (MQC). Conformance testing and manufacturing quality assurance (MQA) testing are at the discretion of the purchaser and/or quality assurance engineer, respectively.

6. Workmanship and Appearance

6.1 Smooth geomembrane shall have good appearance qualities. It shall be free from such defects that would affect the specified properties of the geomembrane.

6.2 Textured geomembrane shall generally have uniform texturing appearance. It shall be free from agglomerated texturing material and such defects that would affect the specified properties of the geomembrane.

6.3 General manufacturing procedures shall be performed in accordance with the manufacturer's internal quality control guide and/or documents.

7. MQC Sampling

7.1 Sampling shall be in accordance with the specific test methods listed in Tables 1 and 2. If no sampling protocol is stipulated in the particular test method, then test specimens shall be taken evenly spaced across the entire roll width.

7.2 The number of tests shall be in accordance with the appropriate test methods listed in Tables 1 and 2.

7.3 The average of the test results should be calculated per the particular standard cited and compared to the minimum value listed in these tables, hence the values listed are the minimum average values and are designated as "min. ave."

8. MQC Retest and Rejection

8.1 If the results of any test do not conform to the requirements of this specification, retesting to determine conformance or rejection should be done in accordance with the manufacturing protocol as set forth in the manufacturer's quality manual.

9. Packaging and Marketing

9.1 The geomembrane shall be rolled onto a substantial core or core segments and held firm by dedicated straps/slings, or other suitable means. The rolls must be adequate for safe transportation to the point of delivery, unless otherwise specified in the contract or order.

10. Certification

10.1 Upon request of the purchaser in the contract or order, a manufacturer's certification that the material was manufactured and tested in accordance with this specification, together with a report of the test results, shall be furnished at the time of shipment.

ENGLISH UNITS

Table 1(a) – High Density Polyethylene (HDPE) Geomembrane -Smooth

Properties	Test Method	Test Value							Testing Frequency (minimum)
		30 mils	40 mils	50 mils	60 mils	80 mils	100 mils	120 mils	
Thickness (min. ave.)	D5199	nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Per roll
• lowest individual of 10 values		-10%	-10%	-10%	-10%	-10%	-10%	-10%	
Density mg/l (min.)	D 1505/D 792	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	200,00 lb
Tensile Properties *(1)* (min. ave.)	D 6693 Type IV								20,000 lb
• yield strength		63 lb/in.	84 lb/in.	105 lb/in.	126 lb/in.	168 lb/in.	210 lb/in.	252 lb/in.	
• break strength		114 lb/in.	152 lb/in.	190 lb/in.	228 lb/in.	304 lb/in.	380 lb/in.	456 lb/in.	
• yield elongation		12%	12%	12%	12%	12%	12%	12%	
• break elongation		700%	700%	700%	700%	700%	700%	700%	
Tear Resistance (min. ave.)	D 1004	21 lb	28 lb	35 lb	42 lb	56 lb	70 lb	84 lb	45,000 lb
Puncture Resistance (min. ave.)	D 4833	54 lb	72 lb	90 lb	108 lb	144 lb	180 lb	216 lb	45,000 lb
Stress Crack Resistance *(2)*	D5397 (App.)	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	per GRI-GM10
Carbon Black Content (range)	D 1603 *(3)*	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	20,000 lb
Carbon Black Dispersion	D 5596	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	45,000 lb
Oxidative Induction Time (OIT) (min. ave.) *(5)*									200,000 lb
(a) Standard OIT	D 3895	100 min.	100 min.	100 min.	100 min.	100 min.	100 min.	100 min.	
— or —									
(b) High Pressure OIT	D 5885	400 min.	400 min.	400 min.	400 min.	400 min.	400 min.	400 min.	
Oven Aging at 85°C *(5), (6)*	D 5721								
(a) Standard OIT (min. ave.) - % retained after 90 days	D 3895	55%	55%	55%	55%	55%	55%	55%	per each formulation
— or —									
(b) High Pressure OIT (min. ave.) - % retained after 90 days	D 5885	80%	80%	80%	80%	80%	80%	80%	
UV Resistance *(7)*	GM 11								
(a) Standard OIT (min. ave.)	D 3895	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	per each formulation
— or —									
(b) High Pressure OIT (min. ave.) - % retained after 1600 hrs *(9)*	D 5885	50%	50%	50%	50%	50%	50%	50%	

(1) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction.
Yield elongation is calculated using a gage length of 1.3 inches
Break elongation is calculated using a gage length of 2.0 in.

(2) The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.

(3) Other methods such as D 4218 (muffle furnace) or microwave methods are acceptable if an appropriate correlation to D 1603 (tube furnace) can be established.

(4) Carbon black dispersion (only near spherical agglomerates) for 10 different views:
9 in Categories 1 or 2 and 1 in Category 3

(5) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.

(6) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.

(7) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

(8) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

(9) UV resistance is based on percent retained value regardless of the original HP-OIT value.

SI (METRIC) UNITS

Table 1(b) – High Density Polyethylene (HPDE) Geomembrane - Smooth

Properties	Test Method	Test Value							Testing Frequency (minimum)
		0.75 mm	1.00 mm	1.25 mm	1.50 mm	2.00 mm	2.50 mm	3.00 mm	
Thickness - mils (min. ave.) • lowest individual of 10 values	D5199	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	per roll
Density (min.)	D 1505/D 792	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	90,000 kg
Tensile Properties *(1)* (min. ave.) • yield strength • break strength • yield elongation • break elongation	D 6693 Type IV	11 kN/m 20kN/m 12% 700%	15 kN/m 27 kN/m 12% 700%	18 kN/m 33 kN/m 12% 700%	22 kN/m 40 kN/m 12% 700%	29 kN/m 53 kN/m 12% 700%	37 kN/m 67 kN/m 12% 700%	44 kN/m 80 kN/m 12% 700%	9,000 kg
Tear Resistance (min. ave.)	D 1004	93 N	125 N	156 N	187 N	249 N	311 N	374 N	20,000 kg
Puncture Resistance (min. ave.)	D 4833	240 N	320 N	400 N	480 N	640 N	800 N	960 N	20,000 kg
Stress Crack Resistance *(2)*	D 5397 (App.)	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	per GRI GM-10
Carbon Black Content - %	D 1603 *(3)*	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	9,000 kg
Carbon Black Dispersion	D 5596	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	20,000 kg
Oxidative Induction Time (OIT) (min. ave.) *(5)* (a) Standard OIT — or — (b) High Pressure OIT	D 3895 D 5885	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	90,000 kg
Oven Aging at 85°C *(5), (6)* (a) Standard OIT (min. ave.) - % retained after 90 days — or — (b) High Pressure OIT (min. ave.) - % retained after 90 days	D 5721 D 3895 D 5885	55% 80%	55% 80%	55% 80%	55% 80%	55% 80%	55% 80%	55% 80%	per each formulation
UV Resistance *(7)* (a) Standard OIT (min. ave.) — or — (b) High Pressure OIT (min. ave.) - % retained after 1600 hrs *(9)*	D 3895 D 5885	N. R. *(8)* 50%	N.R. *(8)* 50%	N.R. *(8)* 50%	N.R. *(8)* 50%	N.R. *(8)* 50%	N.R. *(8)* 50%	N.R. *(8)* 50%	per each formulation

(1) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction
Yield elongation is calculated using a gage length of 33 mm
Break elongation is calculated using a gage length of 50 mm

(2) The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.

(3) Other methods such as D 4218 (muffle furnace) or microwave methods are acceptable if an appropriate correlation to D 1603 (tube furnace) can be established.

(4) Carbon black dispersion (only near spherical agglomerates) for 10 different views:
9 in Categories 1 or 2 and 1 in Category 3

(5) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.

(6) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.

(7) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

(8) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

(9) UV resistance is based on percent retained value regardless of the original HP-OIT value.

ENGLISH UNITS

Table 2(a) – High Density Polyethylene (HDPE) Geomembrane - Textured

Properties	Test Method	Test Value							Testing Frequency (minimum)
		30 mils	40 mils	50 mils	60 mils	80 mils	100 mils	120 mils	
Thickness mils (min. ave.) • lowest individual for 8 out of 10 values • lowest individual for any of the 10 values	D 5994	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	per roll
Asperity Height mils (min. ave.) *(1)*	GM 12	10 mil	10 mil	10 mil	10 mil	10 mil	10 mil	10 mil	every 2nd roll *(2)*
Density (min. ave.)	D 1505/D 792	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	200,000 lb
Tensile Properties (min. ave.) *(3)* • yield strength • break strength • yield elongation • break elongation	D 6693 Type IV	63 lb/in. 45 lb/in. 12% 100%	84 lb/in. 60 lb/in. 12% 100%	105 lb/in. 75 lb/in. 12% 100%	126 lb/in. 90 lb/in. 12% 100%	168 lb/in. 120 lb/in. 12% 100%	210 lb/in. 150 lb/in. 12% 100%	252 lb/in. 180 lb/in. 12% 100%	20,000 lb
Tear Resistance (min. ave.)	D 1004	21 lb	28 lb	35 lb	42 lb	56 lb	70 lb	84 lb	45,000 lb
Puncture Resistance (min. ave.)	D 4833	45 lb	60 lb	75 lb	90 lb	120 lb	150 lb	180 lb	45,000 lb
Stress Crack Resistance *(4)*	D 5397 (App.)	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	per GRI GM10
Carbon Black Content (range)	D 1603 *(5)*	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	20,000 lb
Carbon Black Dispersion	D 5596	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	45,000 lb
Oxidative Induction Time (OIT) (min. ave.) *(7)* (a) Standard OIT	D 3895	100 min.	100 min.	100 min.	100 min.	100 min.	100 min.	100 min.	200,000 lb
— or — (b) High Pressure OIT	D 5885	400 min.	400 min.	400 min.	400 min.	400 min.	400 min.	400 min.	
Oven Aging at 85°C *(7), (8)* (a) Standard OIT (min. ave.) - % retained after 90 days	D 5721 D 3895	55%	55%	55%	55%	55%	55%	55%	per each formulation
— or — (b) High Pressure OIT (min. ave.) - % retained after 90 days	D 5885	80%	80%	80%	80%	80%	80%	80%	
UV Resistance *(9)* (a) Standard OIT (min. ave.)	GM11 D 3895	N.R. *(10)*	N.R. *(10)*	N.R. *(10)*	N.R. *(10)*	N.R. *(10)*	N.R. *(10)*	N.R. *(10)*	per each formulation
— or — (b) High Pressure OIT (min. ave.) - % retained after 1600 hrs *(11)*	D 5885	50%	50%	50%	50%	50%	50%	50%	

(1) Of 10 readings; 8 out of 10 must be ≥ 7 mils, and lowest individual reading must be ≥ 5 mils; also see Note 6.

(2) Alternate the measurement side for double sided textured sheet

(3) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction.
Yield elongation is calculated using a gage length of 1.3 inches
Break elongation is calculated using a gage length of 2.0 inches

(4) P-NCTL test is not appropriate for testing geomembranes with textured or irregular rough surfaces. Test should be conducted on smooth edges of textured rolls or on smooth sheets made from the same formulation as being used for the textured sheet materials.
The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.
The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.

(5) Other methods such as D 4218 (muffle furnace) or microwave methods are acceptable if an appropriate correlation to D 1603 (tube furnace) can be established.

(6) Carbon black dispersion (only near spherical agglomerates) for 10 different views:
9 in Categories 1 or 2 and 1 in Category 3

(7) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.

(8) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.

(9) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

(10) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

(11) UV resistance is based on percent retained value regardless of the original HP-OIT value.

SI (METRIC UNITS)

Table 2(b) – High Density Polyethylene (HDPE) Geomembrane - Textured

Properties	Test Method	Test Value							Testing Frequency (minimum)
		0.75 mm	1.00 mm	1.25 mm	1.50 mm	2.00 mm	2.50 mm	3.00 mm	
Thickness mils (min. ave.) • lowest individual for 8 out of 10 values • lowest individual for any of the 10 values	D 5994	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	per roll
Asperity Height mils (min. ave.) *(1)*	GM 12	0.25 mm	0.25 mm	0.25 mm	0.25 mm	0.25 mm	0.25 mm	0.25 mm	every 2nd roll *(2)*
Density (min. ave.)	D 1505/D 792	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	90,000 kg
Tensile Properties (min. ave.) *(3)* • yield strength • break strength • yield elongation • break elongation	D 6693 Type IV	 11 kN/m 8 kN/m 12% 100%	 15 kN/m 10 kN/m 12% 100%	 18 kN/m 13 kN/m 12% 100%	 22 kN/m 16 kN/m 12% 100%	 29 kN/m 21 kN/m 12% 100%	 37 kN/m 26 kN/m 12% 100%	 44 kN/m 32 kN/m 12% 100%	9,000 kg
Tear Resistance (min. ave.)	D 1004	93 N	125 N	156 N	187 N	249 N	311 N	374 N	20,000 kg
Puncture Resistance (min. ave.)	D 4833	200N	267 N	333 N	400 N	534 N	667 N	800 N	20,000 kg
Stress Crack Resistance *(4)*	D 5397 (App.)	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	per GRI GM10
Carbon Black Content (range)	D 1603 *(5)*	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	9,000 kg
Carbon Black Dispersion	D 5596	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	20,000 kg
Oxidative Induction Time (OIT) (min. ave.) *(7)* (a) Standard OIT — or — (b) High Pressure OIT	D 3895 D 5885	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	90,000 kg
Oven Aging at 85°C *(7), (8)* (a) Standard OIT (min. ave.) - % retained after 90 days — or — (b) High Pressure OIT (min. ave.) - % retained after 90 days	D 5721 D 3895 D 5885	55% 80%	55% 80%	55% 80%	55% 80%	55% 80%	55% 80%	55% 80%	per each formulation
UV Resistance *(9)* (a) Standard OIT (min. ave.) — or — (b) High Pressure OIT (min. ave.) - % retained after 1600 hrs *(11)*	GM11 D 3895 D 5885	N.R. *(10)* 50%	N.R. *(10)* 50%	N.R. *(10)* 50%	N.R. *(10)* 50%	N.R. *(10)* 50%	N.R. *(10)* 50%	N.R. *(10)* 50%	per each formulation

(1) Of 10 readings; 8 out of 10 must be ≥ 0.18 mm, and lowest individual reading must be ≥ 0.13 mm; also see Note 6.

(2) Alternate the measurement side for double sided textured sheet

(3) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction.
Yield elongation is calculated using a gage length of 33 mm
Break elongation is calculated using a gage length of 50 mm

(4) The SP-NCTL test is not appropriate for testing geomembranes with textured or irregular rough surfaces. Test should be conducted on smooth edges of textured rolls or on smooth sheets made from the same formulation as being used for the textured sheet materials.
The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.

(5) Other methods such as D 4218 (muffle furnace) or microwave methods are acceptable if an appropriate correlation to D 1603 (tube furnace) can be established.

(6) Carbon black dispersion (only near spherical agglomerates) for 10 different views:
9 in Categories 1 or 2 and 1 in Category 3

(7) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.

(8) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.

(9) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

(10) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

(11) UV resistance is based on percent retained value regardless of the original HP-OIT value.

Adoption and Revision Schedule

for

HDPE Specification per GRI-GM13

"Test Methods, Test Properties, Testing Frequency for
High Density Polyethylene (HDPE) Smooth and Textured Geomembranes"

Adopted:	June 17, 1997
Revision 1:	November 20, 1998; changed CB dispersion from allowing 2 views to be in Category 3 to requiring all 10 views to be in Category 1 or 2. Also reduced UV percent retained from 60% to 50%.
Revision 2:	April 29, 1999: added to Note 5 after the listing of Carbon Black Dispersion the following: "(In the viewing and subsequent quantitative interpretation of ASTM D5596 only near spherical agglomerates shall be included in the assessment)" and to Note (4) in the property tables.
Revision 3:	June 28, 2000: added a new Section 5.2 that the numeric table values are neither MARV or MaxARV. They are to be interpreted per the the designated test method.
Revision 4:	December 13, 2000: added one Category 3 is allowed for carbon black dispersion. Also, unified terminology to "strength" and "elongation".
Revision 5:	May 15, 2003: Increased minimum acceptable stress crack resistance time from 200 hrs to 300 hrs.
Revision 6:	June 23, 2003: Adopted ASTM D 6693, in place of ASTM D 638, for tensile strength testing. Also, added Note 2.
Revision 7:	February 20, 2006: Added Note 6 on Asperity Height clarification with respect to shear strength.
Revision 8:	Removed recommended warranty from specification.

COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 8/1/2007

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

WE ARE SENDING YOU

	Specifications		Plans		Invoice
X	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y X N

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
020	03400, P1.4/Dwg 17A	Hydraulic Control Splitter Structure	8/1/2007					

X For Review & Approval

For Your Use

Deviations: None from the referenced Specification and Dwg noted.

REMARKS/NOTES The Specification requirement for installation instructions is N/A
This is a resubmitall of 013.

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

(1 EA.) HYDRAULIC CONTROL SPLITTER

NOTES:

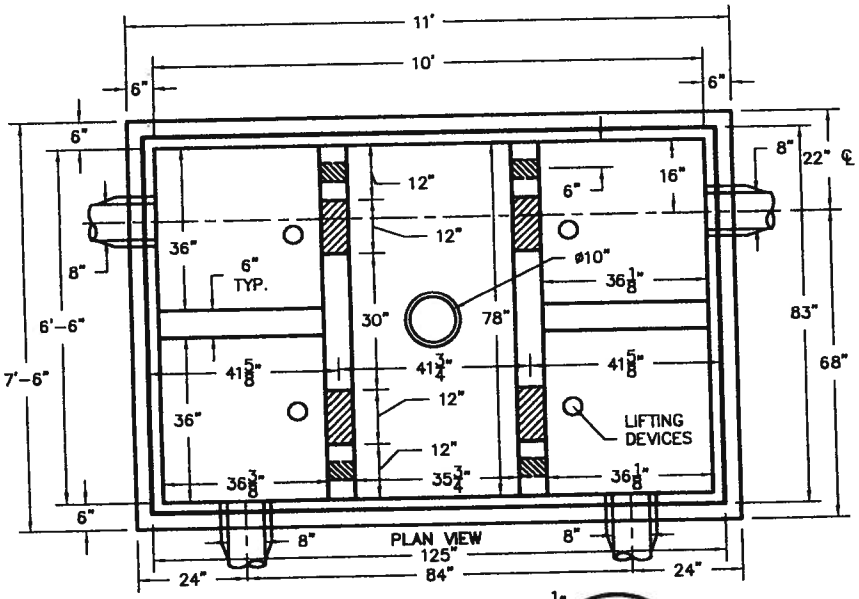
BOX SECTION W/ WALLS – APPROX. 21,800 LBS.

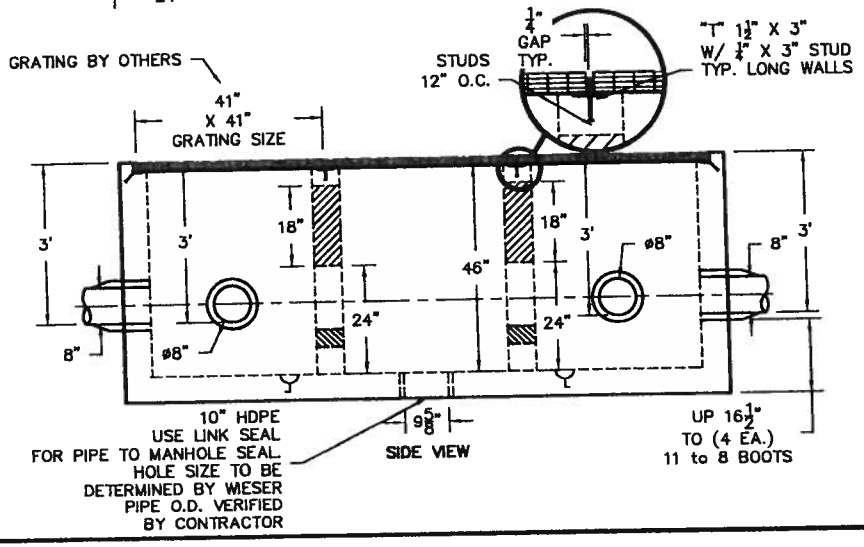
CONCRETE
- 28 DAY COMPRESSIVE F'C=5000 PSI.
- AIR ENTRAINED

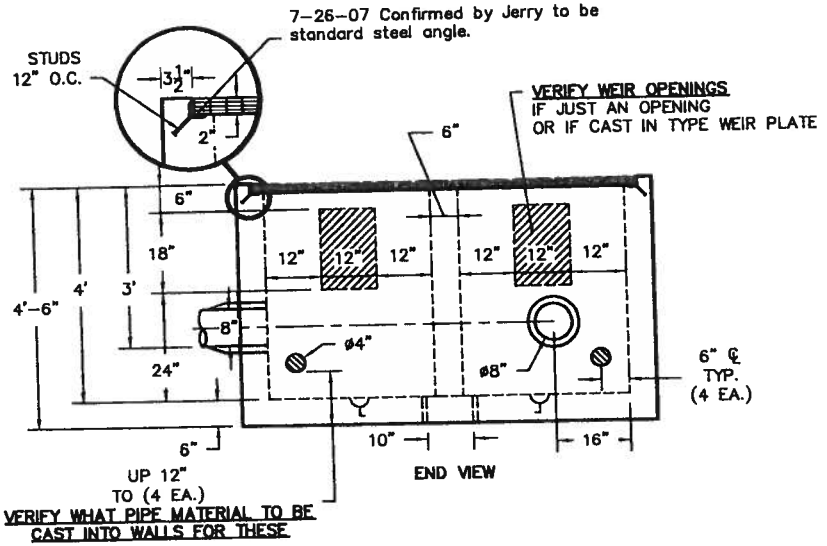
REBAR
- ASTM A-615 GRADE 60.

ALL GRATING, WEIR GATES & DEFLECTOR PLATES TO BE SUPPLIED & INSTALLED BY OTHERS

EXTERIOR BITUMINOUS MASTIC COATING







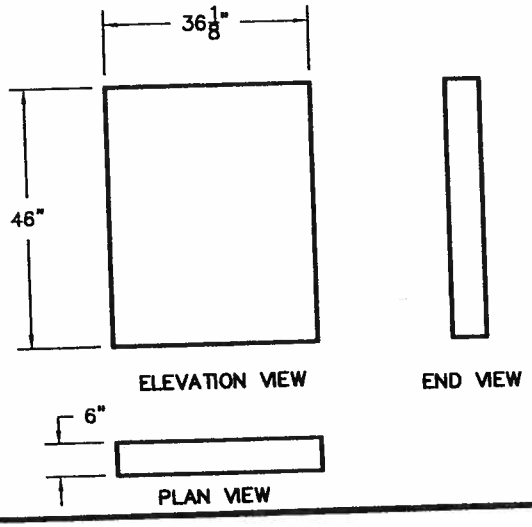
DATE:	
REV NO.	
SCALE: 3/8" = 1'	
DRAWN BY: SWT	
DATE: 7/31/07	
FILE: custom boxes 2007\Compass Environmental Wellsville, NY BP refinery	

WIESER CONCRETE
W3716 US HWY10, MAIDEN ROCK, WI 54750
800-325-8456

COMPASS ENVIRONMENTAL
BP REFINERY
WELLSVILLE, NY
JERRY RESNIK, 419-427-2633

SHEET NO. 1 OF 2

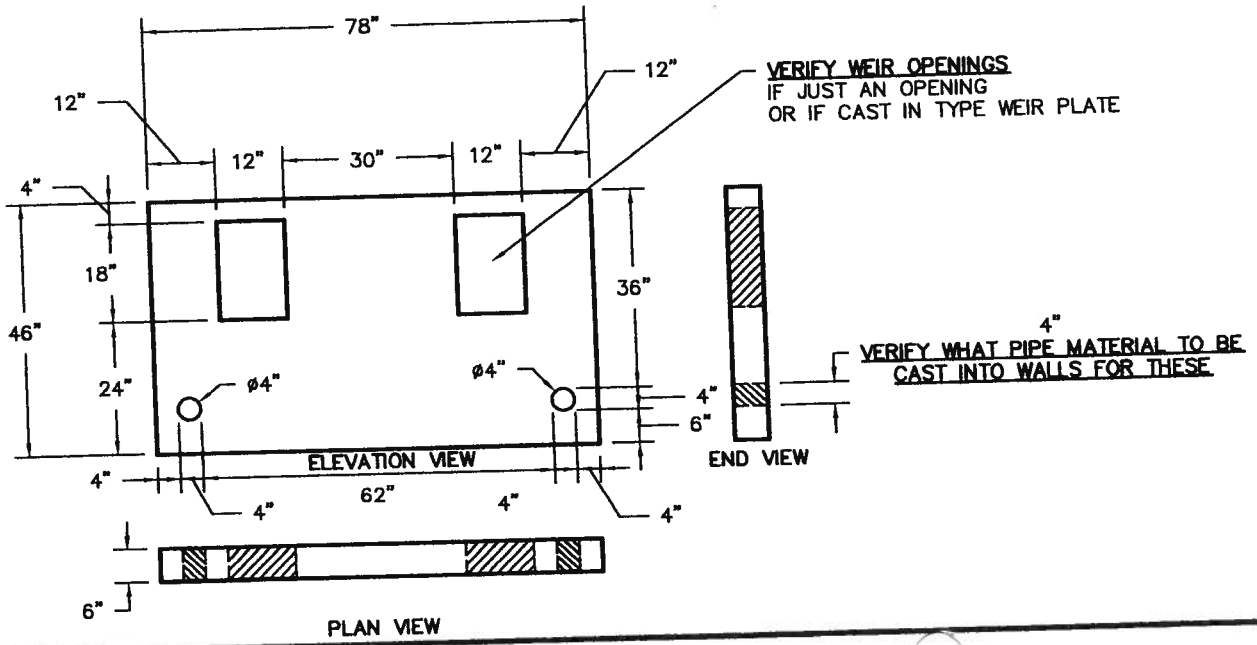
(2 EA.) SHORT DIVIDER WALLS



(1 EA.) HYDRAULIC CONTROL SPLITTER WALL LAYOUT

NOTES:
USE WALL DRAWINGS FOR SETUP.
CAST WALLS TO MAKE ONE UNIT.

(2 EA.) LONG DIVIDER WALLS



DATE:	
REV NO.	
SCALE: 3/8" = 1'	
DRAWN BY: SWT	
DATE: 7/31/07	
FILE: custom boxes 2007\Compass Environmental Wellsville, NY BP refinery	

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W3716 US HWY10. MAIDEN ROCK, WI 54750
800-325-8456

COMPASS ENVIRONMENTAL
BP REFINERY
WELLSVILLE, NY
JERRY RESNIK, 419-427-2633

SHEET NO. 2 OF 2

COMPASS
ENVIRONMENTAL CALL, INC.

D: Ken Hannon, khannon@secor.com
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Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchl@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 8/2/2007

PROJECT: Former Sinclair Wellsville Re
22070708R
Contract #RM2007-06

WE ARE SENDING YOU

	Specifications		Plans		Invoice
X	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y X N

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
021-020	03400, P1.4/Dwg 17A	Hydraulic Control Splitter Structure	8/2/2007					

X For Review & Approval

For Your Use

Deviations: None from the referenced Specification and Dwg noted.

REMARKS/NOTES: The Specification requirement for installation instructions is N/A
This is a resubmittal of 020.

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

(1 EA.) HYDRAULIC CONTROL SPLITTER

NOTES:

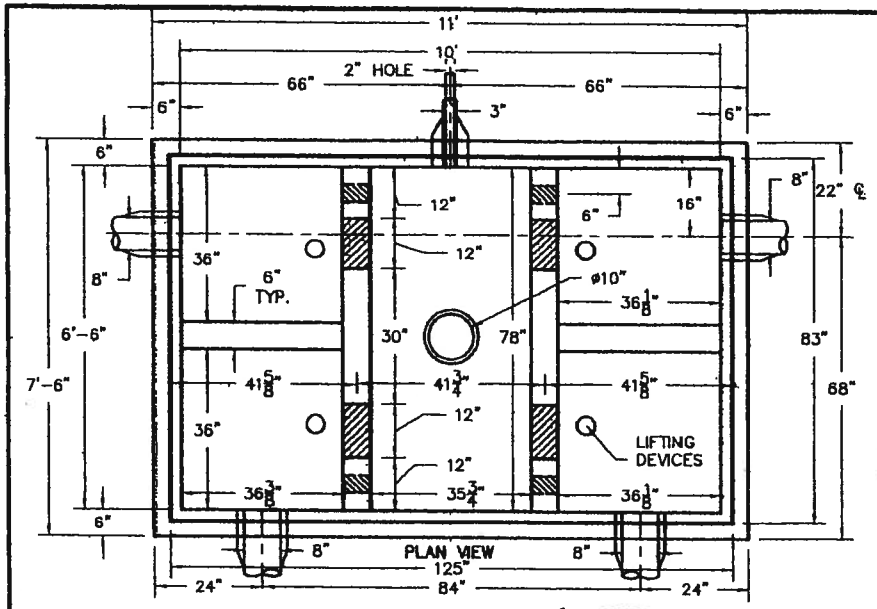
BOX SECTION W/ WALLS – APPROX. 21,800 LBS.

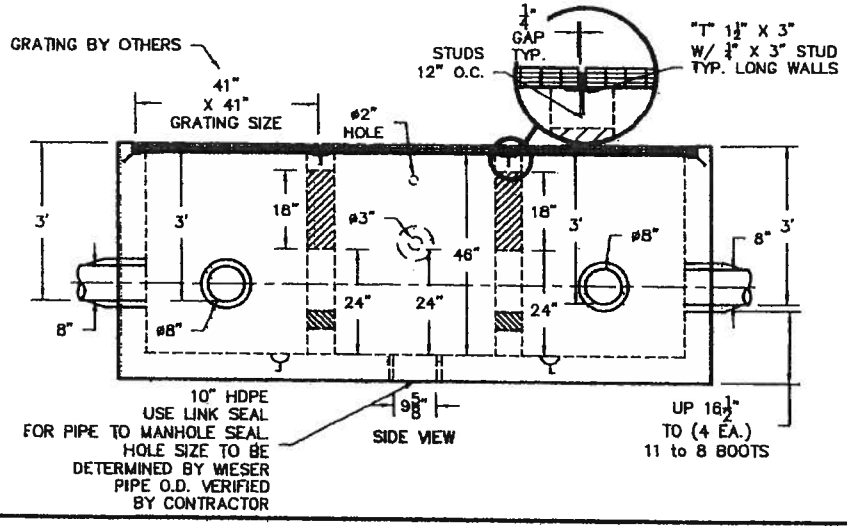
CONCRETE
- 28 DAY COMPRESSIVE F'C=5000 PSI.
- AIR ENTRAINED

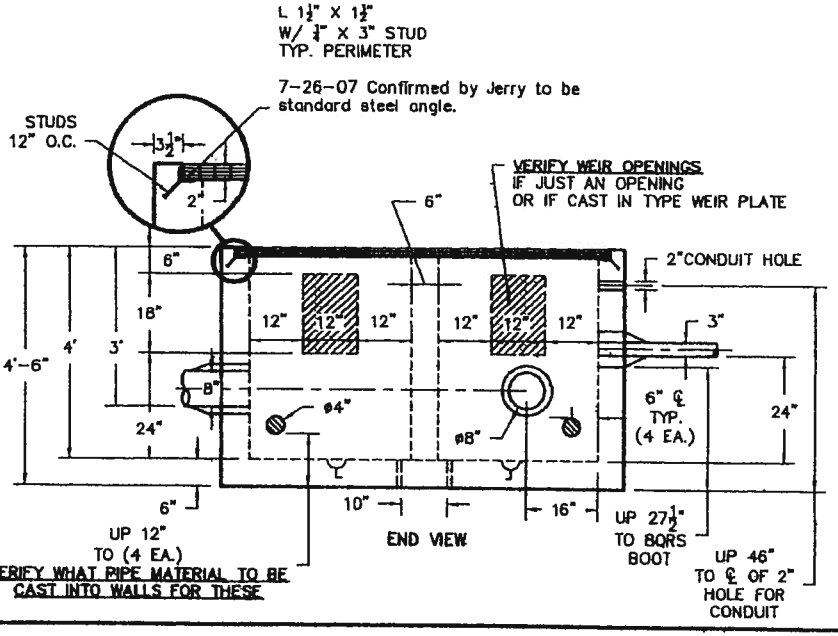
REBAR
- ASTM A-615 GRADE 60.

ALL GRATING, WEIR GATES & DEFLECTOR PLATES TO BE SUPPLIED & INSTALLED BY OTHERS

EXTERIOR BITUMINOUS MASTIC COATING



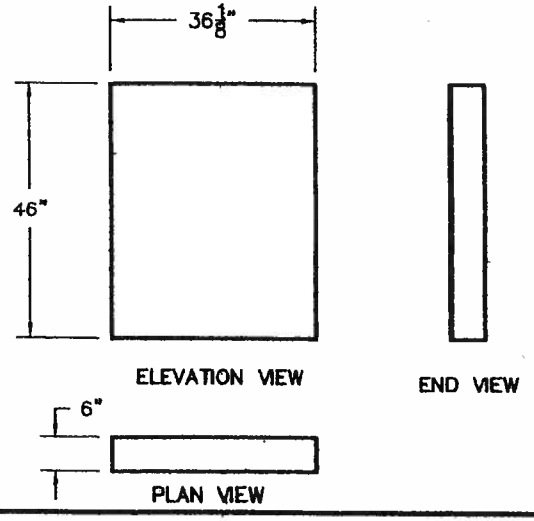




COMPASS ENVIRONMENTAL
BP REFINERY

DATE:
REV NO.
SCALE: 3/8" = 1'
CONCRETE
SHEET 1

(2 EA.) SHORT DIVIDER WALLS

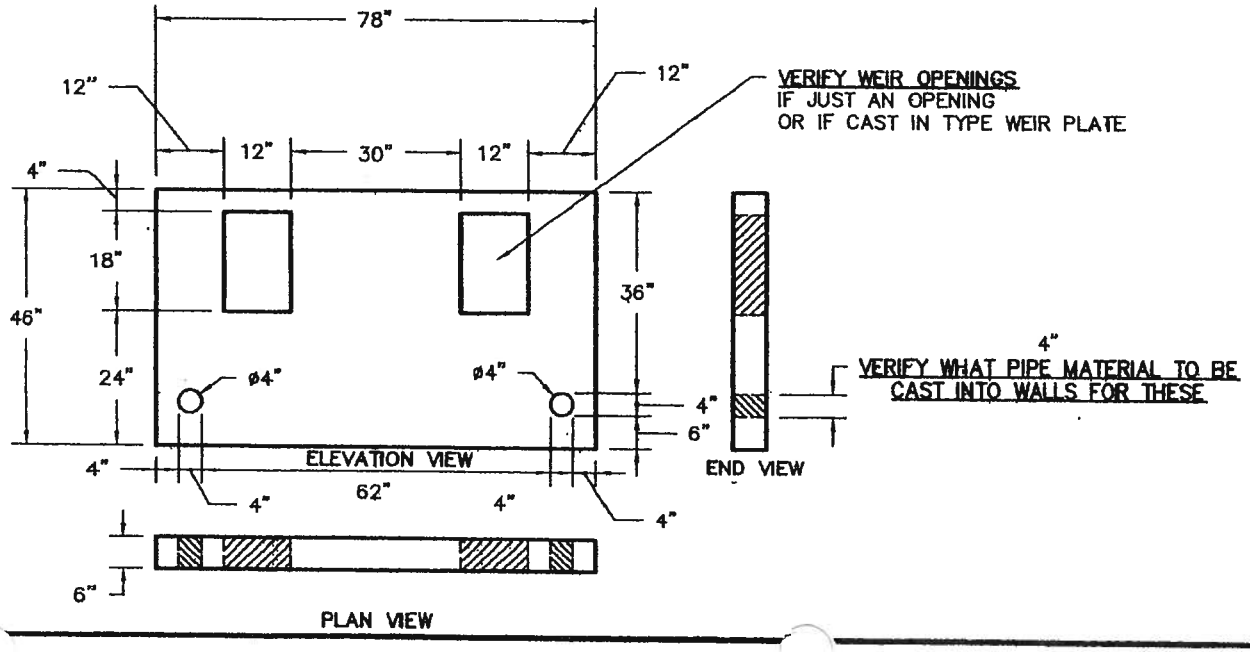


(1 EA.) HYDRAULIC CONTROL SPLITTER WALL LAYOUT

NOTES:

USE WALL DRAWINGS FOR SETUP.
CAST WALLS TO MAKE ONE UNIT.

(2 EA.) LONG DIVIDER WALLS



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DATE: 7/31/07

WIESER CONCRETE
W3716 US HWY10. MAIDEN ROCK, WI 54750

COMPASS ENVIRONMENTAL
BP REFINERY
WELLSVILLE, NY

SHEET NO
2 OF 2

COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 8/2/2007

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

WE ARE SENDING YOU

X	Specifications	X	Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y ____ N X

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
022	02680A, P1.4	Piezometer-Materials & Plan	8/2/2007					

	For Review & Approval	X	For Your Use

Deviations: None from the referenced Specification noted.

REMARKS/NOTES The Specification requirement for installation instructions is N/A
This is a resubmitall of 013.

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC.

CRITTENDEN
(716) 937-6527
SYRACUSE
(315) 635-9818

August 2, 2007

Mr. Terry Lemaster
Compass Environmental, Inc
92 N. Main Street, Unit 20B
P.O. Box 10
Windsor, NJ 08561
(609) 371-7500 * FAX (609) 371-7508

RE: Monitoring well installation at the Former Wellsville Refinery Site, South Brooklyn Avenue, Wellsville, New York.

Soil Drilling

The methods utilized for the installation of the wells will consist of continuous soil sampling with 2" outside diameter, 2.0' long spilt spoons, advanced at 2.0 foot increments, with 4 1/4" inside diameter hollow stem augers advanced to as estimated completion depth of (+/- 20.0 feet). The soil sampling will be performed according to ASTM-D-1586 specifications throughout the overburden.

Well Installation

Monitoring well installation will consist of installing a +/- 10.0' long, 2 inch diameter .010 slot schedule 40 PVC well screen, threaded to a 2"diameter schedule 40 riser pipe extended to the ground surface. Appropriately sized sand filter material will be placed around and extending two feet above the slotted portion of the well screen. A 0.5 foot thick fine sand filter pack will be placed above the sand filter material before introducing a 3.0 foot thick bentonite seal. An additional 0.5 foot fine sand filter pack will be placed above this bentonite seal with sufficient amount of time allowed for hydrating the bentonite seal. The remainder of the annular space around the upper portion of the well will then be grouted to within several feet of the surface to allow for the installation of a flush mount surface casing

Well Development and Testing

Once the grout has been sufficiently cured (+/- 24 hours) the well(s) will be developed to remove any fines / sand material introduced into the well and surrounding sand-pack during well installation procedures. The development will consist of surging and bailing each well for approximately one hour.

Dale Gramza

Manager of Geologic Services
NWE&C, Inc.

VMC 93-7202 16 pgs

drilling fluids • grouts & sealants • polymers & additives • well rehabilitation chemicals

CETCO DRILLING PRODUCTS

MATERIAL SAFETY DATA SHEET

MSDS

MATERIAL SAFETY DATA SHEET May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

PRODUCT NAME: PUREGOLD® MEDIUM CHIPS

Section I MANUFACTURER'S INFORMATION

MANUFACTURER'S NAME & ADDRESS:

CETCO – *Drilling Products Group*
1500 West Shure Drive
Arlington Heights, IL 60004

Date Prepared: June 10, 2002

Telephone: 847-392-5800 / Fax: 847-577-5571
EMERGENCY CONTACT: *CHEMTREC* 800-424-9300
E-mail: www.cetco.com

Section II HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

PRODUCT IDENTIFICATION:

Chemical Name: Bentonite Clay
Chemical Family: Natural Mineral, Montmorillonite
CAS No: 1302-78-9 (Bentonite is on the TSCA inventory)
Formula: Naturally occurring hydrated aluminosilicate of sodium, calcium, magnesium, and iron
NFPA/HMIS: Health – 1*, Fire - 0, Reactivity - 0, Specific Hazard - *See Section VI.*
DOT Class: Not Regulated (49 CFR, IMDG, ICAO, IATA)

HAZARDOUS COMPONENTS: (Specific Chemical Identity: Common Name(s))	OSHA PEL (TWA)	ACGIH TLV (TWA)	NIOSH REL (TWA)	% (optional)
Quartz: CAS# 14808-60-7 (naturally occurring constituent)	–	–	–	–
Respirable Quartz:	0.1 mg/m³	50 µg/m³	50 µg/m³	<1- 2%
Nuisance Dust - Respirable:	5 mg/m³	3 mg/m³	–	–
Total Dust:	15 mg/m³	10 mg/m³	–	–

OSHA PEL - OSHA Permissible Exposure Limit, 8 hour Time-Weighted Average
ACGIH TLV - American Conference of Governmental Industrial Hygienists Threshold Limit Value, 8 hr. TWA, 40 hr. week
NIOSH REL - National Institute for Occupational Safety and Health, Recommended Exposure Limit, 10 hr. TWA, 40 hr. week

* WARNING: This product contains a small amount of quartz that may cause delayed respiratory disease if inhaled over a prolonged period of time. Avoid breathing dust. Use NIOSH/MSHA approved respirator where TLV for quartz may be exceeded. IARC Monographs on the evaluation of the Carcinogenic Risk of Chemicals to Humans (volume 68, 1997) concludes that quartz is carcinogenic to humans (IARC classification 1).

Note: The Permissible Exposure Limits (PELs) reported above are the pre-1989 limits that were reinstated by OSHA June 30, 1993 following a decision by the United States Circuit Court of Appeals for the 11th Circuit. Federal OSHA is now enforcing these PELs. More restrictive exposure limits may be enforced by some other jurisdictions.

National Institute for Occupational Safety and Health (NIOSH) has recommended that the permissible exposure limit be changed to 50 micrograms respirable free silica per cubic meter of air (0.05 mg/ m³) as determined by a full shift sample up to a 10 hour working day, 40 hours per week. See: 1974 NIOSH criteria for a recommended Standard for Occupational Exposure to Crystalline Silica for more detailed information.

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PRODUCT NAME: **PUREGOLD® MEDIUM CHIPS**

Section III PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	- Not Applicable	**Specific Gravity** (Water = 1.0)	- 2.5
Vapor Pressure (mm Hg.)	- Not Applicable	**Melting Point**	- Not Applicable
Vapor Density (Air = 1.0)	- Not Applicable	**Evaporation Rate** (Butyl Acetate = 1.0)	- Not Applicable
Solubility in Water	- Negligible		
Appearance and Odor	- Pale gray to buff chips, odorless		

Section IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (*Method Used*) - Not Applicable

Extinguishing Media - This product is not considered flammable, nor will it support combustion. Use extinguishing media appropriate to the surrounding fire.

Flammable Limits - Not Applicable **LEL** - Not Applicable **UEL** - Not Applicable

Special Fire Fighting Procedure - Not Applicable

Unusual Fire/Explosion Hazards - None known

Section V REACTIVITY DATA

Stability: Stable - X **Conditions to Avoid** - None Known

Incompatibility (*Materials to Avoid*): None Known

Hazardous Decomposition or By-products: None Known

Hazardous Polymerization: Will Not Occur - X **Conditions to Avoid** - None Known

Section VI HEALTH HAZARD DATA

This product is a chemically inert, non-combustible mineral. A single exposure will not result in serious adverse effects. Excessive occupational, uncontrolled inhalation of dust may cause lung disease, silicosis, with symptoms of shortness of breath and reduced pulmonary function.

Route(s) of Entry: Inhalation? Yes Skin? No Ingestion? No

Health Hazards (Acute and Chronic): May cause delayed respiratory disease if dust inhaled over a prolonged period of time.

Inhalation: Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may cause irritation of the nose, throat and respiratory passages. Inhalation of dust may have the following serious chronic health effects:

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1 - carcinogenic to humans). Refer to *IARC Monograph 68, Silica, Some Silicates and Organic Fibers* (published in June 1997) in conjunction with the use of these materials.

The National Toxicology Program classifies respirable crystalline silica as a known human carcinogen. For further information See: "Adverse effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, page 761-765, 1997.

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PRODUCT NAME: **PUREGOLD® MEDIUM CHIPS**

Section VI HEALTH HAZARD DATA (continued)

Skin Contact: No adverse effects expected

Eye Contact: Contact may cause mechanical irritation and possible injury

Ingestion: No adverse effects expected for normal, incidental ingestion

Chronic Health Effects: See "Inhalation" subsection above with respect to silicosis, cancer status and other data with possible relevance to human health.

Signs and Symptoms of Exposure: There are generally no signs or symptoms of exposure to crystalline silica. See "Inhalation" subsection above for symptoms of silicosis.

Medical Conditions Generally Aggravated by Exposure: Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation should not be exposed to crystalline silica dust.

Emergency and First Aid Procedures:

Eye Contact – Flush the eyes immediately with large amounts of water, lifting the upper and lower lids occasionally. If irritation persists or for imbedded foreign body, get immediate medical attention.

Gross Inhalation – Remove to fresh air. If breathing has stopped, perform artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get prompt medical attention.

Skin Contact - No first aid should be needed since this product does not affect the skin. Wash exposed skin with soap and water before breaks and at the end of the shift.

Ingestion - If large amounts are swallowed, get immediate medical attention.

Section VII PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled: Vacuum if possible to avoid generating airborne dust. Avoid breathing dust. Wear an approved respirator. Avoid adding water; product will become slippery when wet. Waste Disposal Method – Follow federal, state and local regulations for solid waste.

Handling and Storing Precautions: Do not breathe dust. Use normal precautions against bag breakage or spills of bulk material. Avoid creation of respirable dust. Use good housekeeping in storage and use areas to prevent accumulation of dust in work areas. Use adequate ventilation and dust collection. Maintain and use proper, clean respiratory equipment. Launder clothing that has become dusty. Empty containers (bags, bulk containers, storage tanks, etc.) retain silica residue and must be handled in accordance with provisions of this Material Safety Data Sheet. Warn and Train employees in accordance with state and federal regulations.

Other Precautions: Slippery when wet.

WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS – USERS IN CASE OF RESALE) BY POSTING AND OTHER MEANS OF THE HAZARDS AND OSHA PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT OSHA PRECAUTIONS.

Section VIII CONTROL MEASURES

Respiratory Protection: Use appropriate respiratory protection for respirable particulate based on consideration of airborne workplace concentration and duration of exposure arising from intended end use. Refer to the most recent standards of ANSI (Z88.2) OSHA (29 CFR 1910.134), MSHA (30 CFR Parts 56 and 57) and NIOSH Respirator Decision Logic.

Ventilation: Use local exhaust as required to maintain exposures below applicable occupational exposure limits (*See Section II*). See also ACGIH "Industrial Ventilation – A Manual for Recommend Practice", (*current edition*).

Protective Gloves: Recommended.

Eye Protection: Safety glasses or goggles recommended.

Other Protective Clothing or Equipment: As appropriate for work environment. Dusty clothing should be laundered before reuse.

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PRODUCT NAME: PUREGOLD® MEDIUM CHIPS

Section VIII CONTROL MEASURES (continued)

Transportation Data:	U.S. DOT Hazard Classification
Proper Shipping Name:	Not regulated
Technical Name:	N/A
UN Number:	N/A
Hazard Class/Packing Group:	N/A
Labels Required:	None
DOT Packaging Requirements:	N/A
Exceptions:	N/A

Section IX OTHER REGULATORY INFORMATION

SARA 311/312: Hazard Categories for SARA Section 311/312 Reporting: Chronic Health

SARA 313: This product contains the following chemicals subject to annual release reporting requirements under the SARA section 313 (40 CFR 372): None

CERCLA Section 103 Reportable Quantity: None

California Proposition 65: This product contains the following substances known to the state of California to cause cancer and/or reproductive harm: crystalline silica (respirable).

Toxic Substances Control Act: All of the components of this product are listed on the EPA TSCA Inventory or are exempt from notification requirements.

European Inventory of Commercial Chemical Substances: All the components of this product are listed on the EINECS Inventory or exempt from notification requirements. (The EINECS number for Quartz: 231-545-5)

Canadian Environmental Protection Act: All the components of this product are listed on the Canadian Domestic Substances List or exempt from notification requirements.

Japan MITI: All the components of this product are existing chemical substances as defined in the Chemical Substance Control Law

Australian Inventory of Chemical Substances: All the components of this product are listed on the AICS Inventory or exempt from notification requirements.

Canadian WHMIS Classification: This product contains crystalline silica (respirable), classified as a Class D, Division 2, Subdivision A substance.

European Community Labeling Classification: Harmful (Xn)

European Community Risk and Safety Phrases: R40, R48, S22

REFERENCES:

Registry for Toxic Effects of Chemical Substances (RTECS), 1995.
Patty's Industrial Hygiene and Toxicology.
NTP Ninth Annual Report on Carcinogens, 1997.
IARC Monograph Volume 68, Silica, Some Silicates and Organic Fibers, 1997.

The information herein has been compiled from sources believed to be reliable and is accurate to the best of our knowledge. However, CETCO cannot give guarantees regarding information from other sources, and expressly does not make any warranties, nor assumes any liability, for its use.

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MATERIAL SAFETY DATA SHEET (MSDS)

Revision 6/24/99 renewed 12/1/2002. The current version of this document can be obtained from http://www.riccisand.com/.

MSDS Espanol http://www.riccisand.com/msdsesp.html.

MSDS Francais http://www.riccisand.com/msdsfr.html.

Identity: Crystalline Silica CAS #14808-60-7

MANUFACTURER IDENTIFICATION

- Ricci Bros Sand Co., Inc.
- 2099 Dragston Rd. P.O. Box 664 Port Norris NJ USA 08349
- 856-785-0166 or 856-785-2136 fax

HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Chemical Components: Silica, Crystalline Quartz (respirable). **Specific Chemical Identity:** Silicon Dioxide, SiO2. **Composition:** SiO2: 95% minimum **Balance:** Fe2O3, CaO, Na2O, MgO Al2O3, K2O, TiO2. **Common Identity:** Silica Sand, Crystalline Silica, Sandblast Sand, Filter Sand, Filter Gravel or trade name (**See page two for more trade names).

Permissable Exposure Limits: Exposure to airborne crystalline silica shall not exceed an 8 hour time weighted average (TWA) limit as stated in 29CFR1910.1000 (refer to reference 1). **Threshold Limit Values (TLVs)** for exposure to crystalline silica: **Crystalline silica TLV:** 10/(%crystalline silica +2) mg/m3. **Total silica TLV:** 30/(%crystalline silica +2) mg/m3. **ACGIH TLV:** 0.10mg/m3 for 8 hr time weighted average for 100% crystalline silica (see reference 2). **NIOSH TLV:** 0.05 mg/m3 for 10 hr shift, 40 hr. week for 100% crystalline silica (see reference 3).

PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 4046F. **Specific Gravity:** 2.65. **Melting Point:** 3050F. **Vapor Pressure:** none. **Evaporation Rate** (Butyl Acetate=1): none. **Vapor Density** (Air=1): none. **Solubility in water:** insoluble. **Appearance and Odor:** white, grey or tan, no odor or taste.

FIRE, EXPLOSION AND REACTIVITY DATA

Flash Point: non-flammable. **Flammable Limits:** none. **LEL:** none. **UEL:** none. **Extinguishing Media:** none required. **Special Firefighting Procedures:** N/A. **Unusual Fire and Explosion Hazards:** N/A **Stability:** stable. **Conditions to avoid:** none. **Incompatibility (materials to avoid):** *Contact with agents such as molten magnesium, fluorine, chlorine triflouride, manganese trioxide, oxygen difluoride, or hydrofluoric acid may cause fires or corrosive gases.* **Hazardous Polymerization:** will not occur.

HEALTH HAZARD DATA

Routes of Entry: Inhalation? Yes. Skin? No. Ingestion? No. **Acute and Chronic Health Hazards:** *Prolonged exposure to crystalline silica by inhalation may cause silicosis, a fibrosis (scarring) of the lungs which can be progressive and may lead to death.* **Silica as Related to Carcinogenicity:** *Crystalline silica (quartz) inhaled from occupational souces is classified by the International Agency for Research on Cancer (IARC) as class I: carcinogenic to humans (see reference 4);* **Signs and Symptons of Exposure:** *Shortness of breath, reduced pumonary function, coughing, wheezing, and possible chest illness.* **Medical Conditions Generally Aggravated by Exposure:** Bronchitis, Emphysema and Asthma. Smoking is known to aggravate the effects of exposure. *Persons with silicosis may develop*

tuberculosis (reference 5). Exposure to crystalline silica may also result in scleroderma and/or kidney disease (reference 5). **Emergency First Aid Procedures:** For sand in eyes, immediately flush with water. For gross inhalation, remove person to fresh air and seek medical attention accordingly.

CONTROL MEASURES

Workplace Dust Surveys: *Test the employee personal breathing zone for crystalline silica using dust sampling equipment and real time dust monitoring equipment (refer to reference 9).* **Respiratory Protection:** Use NIOSH/MSHA approved (ANSI Z88.2 Part 11) *particulate* respirators with this product. Put in place a respiratory protection and monitoring program which meets the requirements of 29CFR 1910.134: "Respiratory Protection". (Refer to references 6 and 7). *Select respiratory based on the results of the workplace dust surveys. Use respirators that protect against the highest concentrations of crystalline silica if the actual concentration is unknown. Choose respiratory protection that meets the requirements of the table below (refer to references 3 and 9):*

Concentration of Crystalline Silica in Multiples of Standard	Recommended Respirator Type
<=5X	Single use (valveless dust respirator)
<=10X	Quarter or half-mask respirator with replaceable dust filter or single use (with valve) dust respirator OR type C, demand type (negative pressure), with quarter or half mask facepiece
<=100X	Full facepiece respirator with replaceable dust filter OR Type C, demand type (negative pressure), with fullfacepiece
<=200X	Powered air purifying (positive pressure) respirator with replaceable applicable filter or with 99.7% efficient HEPA-type filter
200X	Type C, supplied air respirator, continuous flow type with full facepiece, hood or helmet

Engineering and Administrative Controls *Use designed ventilation systems as the primary method to remove crystalline silica from workplace air. Use administative controls such as job rotation and water spray to supplement engineering controls and respiratory protection.* If sandblasting use a respirator approved by NIOSH for abrasive blasting operations. Enclose the operation in a properly designed and maintained blasting enclosure (see reference 8).**Other Protective Clothing or Equipment:** *Use gloves, protective clothing and ANSI-approved eye protection with this product.* **Medical Surveilance:** *Make bi-annual annual medical evaluations available to all workers whom may be exposed to crystalline silica. Include in the evaluations the employee medical history, chest X-Ray, pulmonary functions and review by a physician(see reference 3).*

PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled: Use dustless method (water or wet HEPA-type vacuum) if not contaminated. Use water sprays and shovels to clean up spills. Do not dry sweep this product with brooms. *Do NOT use compressed air to clean up product.* If contaminated use recommended method for contaminate. **Waste Disposal Method:** Dispose in accordance with federal, state and local regulations. **Work/Hygenic Practices:** Avoid creating and breathing dust. Warn and train your employees and customers of the hazards of this product in accordance with applicable "Right to Know" practices. *Do not smoke if working with silica products. Refer to the guidelines in references 11, 12 and 13 while working with crystalline silica.*

OSHA HAZARD COMMUNICATION

This product falls under the OSHA Hazard Communication Standard 29CFR1910.1200 (see reference 10). Refer to "Hazard Communication Labeling and Warning" document: http://www.riccisand.com/hazlabel.html.

REFERENCES

1. Code of Federal Regulations 29CFR1910.1000: "Air Contaminants," Occupational Safety and Health Administration (OSHA), Washington, DC, http://www.osha.gov.

2. Threshold Limit Values and Exposure Indices for Chemical Substances in Workroom Air," American Conference of Governmental Industrial Hygenists (ACGIH), Cincinnati, OH 1988, http://www.acgih.org.

3. National Technical Information Service, Springfield VA (703/487-4650): Criteria for a Recommended Standard - Occupational Exposure to Crystalline Silica, HEW Publication No. (NIOSH) 75-120, NTIS Acquisition No. PB 246-697, http://www.ntis.gov.

4. IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans-*Silica and Some Silicates, Coal Dust and Para-Aramid Fibrils, Vol. 68, 1997*. World Health Organization, International Agency for Research on Cancer (IARC), Lyon, France, 1997, http://www.iarc.fr.

5. Crystalline Silica Health Effects. National Industrial Sand Association (NISA), Calverton, MD, 1997. http://www.riccisand.com/.

6. Code of Federal Regulations, 29CFR Part 1910.134: "Respiratory Protection," Occupational Safety and Health Administration (OSHA), Washington, DC 1993. http://www.osha.gov.

7. "American National Standards Institute (ANSI) Practices for Respiratory Protection," ANSI Z88.2-1992, ANSI, New York, http://www.ansi.org.

8. "Air Quality: Health Standards for Abrasive Blasting...Final Rule," Federal Register 59.34, 2/18/94.

9. ASTM E1132-89 (Reapproved 1993): "Standard Practice for Health Requirements Relating to Occupational Exposure to Quartz Dust," American Society for Testing and Materials (ASTM), Phila, PA, http://www.astm.org.

10. Occupational Safety and Health Administration (OSHA) Regulations (Standards - 29 CFR) - 1910.1200 - Hazard Communication, http://www.osha-slc.gov/OshStd_data/1910_1200.html.

11. National Institute for Occupational Safety and Health (NIOSH), "A Guide to Working Safely with Silica," 1997. http://www.cdc.gov/niosh/otherpub.html.

12. NIOSH Publications (1992-1996). http://www.cdc.gov/niosh/consilic.html. Preventing Silicosis and Deaths in Construction Workers--DHHS (NIOSH) Publication No. 96-112. http://www.cdc.gov/niosh/92-107.html. Preventing Silicosis and Deaths from Rock Drilling--DHHS (NIOSH) Publication No. 92-107. http://www.cdc.gov/niosh/92-102.html. Preventing Silicosis and Deaths from Sandblasting--DHHS (NIOSH) Publication No. 92-102.

13. NIOSH Resprator User's Notice: Attention: All Users of Type CE, Abrasive-Blast Supplied-Air Respirators, National Institute for Occupational Safety and Health (NIOSH), May 23,1996. http://www.cdc.gov/niosh/abrasi-1.html.

NOTICE

THE INFORMATION CONTAINED IN THIS MATERIAL SAFETY DATA SHEET IS BELIEVED TO BE CORRECT. RICCI BROS SAND COMPANY, INC. MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND ASSUMES NO LIABLITY IN CONNECTION WITH ANY USE OF THIS INFORMATION. CUSTOMERS AND USERS OF THESE SILICA PRODUCTS MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE, LOCAL REGULATIONS, AND MUST SEEK MEDICAL, LEGAL AND TECHNICAL OPINONS REGARDING THEIR USE AND THEIR HAZARDS.

**TRADE NAME LISTING OF SILICON DIOXIDE AS PRODUCED BY RICCI BROS. SAND CO., INC. OTHER TRADE NAMES MAY APPLY.

Industrial Sands: OOO, OO, OON, O, 1, 2, 3, 1Q, 2Q, 3Q, 4Q, 10 grit-50 grit. **Filter Media:** 0.10-3.0 mm. **Foundry Sand:** AFS 30 thru 100, cement lining sand, P30, P40, etc. **Well Gravel:** OO thru #4. **Gravels:** Sizes 1.2 -63.0mm. **Other Media:** C-3, reactor sand, runway traction sand, torpedo sand, pump sand, pool filter sand, play sand, sewage sand, mason sand. **Blends:** O-1 blend, 20-30 grit, 0.8-2.0mm, etc.

St Marys Cement Co.

St Marys Cement Company
55 Industrial Street, 4th Floor
Toronto, Ontario
M4G 3W9
Tel.: 416-696-4411
Fax: 416-696-4435

MATERIAL SAFETY DATA SHEET

St. Marys Portland Cement — Date Prepared: November 2001 (Revised: October 2004)

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical Name and Synonyms:	Portland Cement and Hydraulic Cement CAS #65997-15-1
Chemical Family:	*Calcium Compounds*
Product names:	St. Marys Portland Cement CSA A3000 Types 10, 20, 30, 40, 50, GU, MS, MH, HE, LH, HS C150 Types I, II, I-II, III, IV, V

Note:
As this MSDS covers all St. Marys Portland cement, composition of individual products may vary with regard to hazardous constituents.

WHMIS classification D2A, E

Manufacturer:	St. Marys Cement Co. 55 Industrial Street, 4th Floor Toronto, ON M4G 3W9
Informational Telephone Number:	416-696-4411
Emergency Telephone Number:	519-284-1020 Ext. 205 905-623-3341 Ext. 243

General Information:
Portland cement is the binding ingredient used in concrete mixes with or without other binders. Concrete is widely used as a building material for structure and pavements.

Composition/Information on Ingredients
Product: Portland Cement CAS #65997-15-1

Major ingredients are:

Component	CAS Number	Formula	Percent (%)
Tricalcium Silicate	12168-85-3	$3CaOSiO_2$	20-80
Dicalcium Silicate	10034-77-2	$2CaOSiO_2$	0-50
Tetracalcium Aluminoferrite	12068-35-8	$4CaOAl_2O_3Fe_2O_3$	0-20
Tri-Calcium Aluminate	12042-78-3	$3CaOAl_2O_3$	0-15
Calcium Sulphate Dihydrate	13397-24-5	$CaSO_42H_2O$	0-10
Calcium Carbonate	1317-65-3	$CaCO_3$	0-5
Magnesium Oxide	1309-48-4	MgO	0-6
Calcium Oxide	1305-78-8	CaO	0-4
Crystalline Silica	14808-60-7	SiO_2	0-0.75

Additionally, trace amounts of potassium and sodium compounds, chromium compounds, and nickel compounds may be present.

SECTION 2 - HAZARDOUS INGREDIENTS

Exposure Limits:

	OSHA TWA	ACGIH TVL TWA
Portland Cement CAS #65997-15-1		
Up to 95% by weight		
Respirable Dust	5mg/m^3	
Total Dust	15mg/m^3	10mg/m^3
Calcium Sulphate Dihydrate CAS #13397-24-5		
Up to 10% by weight		
Respirable Dust	5mg/m^3	
Total Dust	15mg/m^3	10mg/m^3
Calcium Carbonate CAS #1317-65-3		
Up to 5% by weight		
Respirable Dust	5mg/m^3	
Total Dust	15mg/m^3	10mg/m^3
Crystalline Silica CAS #14808-60-7		
Up to 0.75% by weight		
Respirable Dust	0.1mg/m^3	0.1mg/m^3
Magnesium Oxide CAS #1309-48-4	10mg/m^3	10mg/m^3
Calcium Oxide CAS #1306-78-8	5mg/m^3	2mg/m^3
Nuisance Dust		
Respirable Dust	5mg/m^3	5mg/m^3
Total Dust	15mg/m^3	10mg/m^3
Chromates	.01mg(CrO_3)/m^3	.5mg(Cr)/m^3

Trace Elements

As Portland cement is made from materials mined from the earth and is processed using energy provided by fuels, trace amounts of naturally occurring, potentially harmful chemicals might show up during chemical analysis. For example, these products may contain up to 25% of insoluble residue, some of which may be crystalline silica. Other trace components may include potassium and sodium sulphate compounds, chromium compounds and nickel compounds.

SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview

Portland cement is a light grey powder that poses little immediate hazard. A single short-term exposure to the dry powder is not likely to cause serious harm. However, exposure of sufficient duration to wet Portland cement can cause serious, potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns, including third degree burns. The same type of tissue destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry Portland cement.

Potential Health Effects

Relevant routes of exposure: eye contact, skin contact, inhalation, and ingestion.

Effects Resulting from Eye Contact:

Exposure to airborne dust may cause immediate or delayed irritation or inflammation. Eye contact by larger amounts of dry powder or splashes of wet Portland cement may cause effects ranging from moderate eye irritation to chemical burns and blindness. Such exposures require immediate first aid (see Section 4) and medical attention to prevent significant damage to the eye.

Effects Resulting from Skin Contact:

Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing skin contact, particularly contact with wet cement. Exposed persons may not feel discomfort until hours after the exposure have ended and significant injury has occurred.

Exposure to dry Portland cement may cause drying of the skin with consequent mild irritation or more significant effects attributable to aggravation of other conditions. Dry Portland cement contacting wet skin or exposure to moist or wet Portland cement may cause more severe skin effects including thickening, cracking or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of (caustic) chemical burns.

Some individuals may exhibit an allergic response upon exposure to Portland cement, possibly due to trace amounts of chromium. The response may appear in a variety of forms ranging from mild rash to severe skin ulcers. Persons already sensitized may react to their first contact with the product. Other persons may first experience this effect after years of contact with Portland cement products.

Effects Resulting from Inhalation:

Portland cement may contain trace amounts of free crystalline silica. Prolonged exposure to respirable free crystalline silica may aggravate other lung conditions. It also may cause delayed lung injury including silicosis, a disabling and potentially fatal lung disease, and/or other diseases. Also see Carcinogenic Potential below.

Exposure to Portland cement may cause irritation to the moist membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.

Effects resulting from ingestion:

Although small quantities of dust are not known to be harmful, ill effects are possible if larger quantities are consumed. Portland cement should not be eaten.

Carcinogenic Potential:

International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP), or Occupational Safety and Health Administration (OSHA) do not list Portland cement as a carcinogen.

IRAC has designated Crystalline silica, a potential trace contaminant in Portland cement as carcinogenic to humans (Group 1). The NTP indicates that Crystalline silica is reasonably anticipated to be a carcinogen (Group 2).

Medical conditions which may be aggravated by inhalation or dermal exposure:

- Pre-existing upper respiratory and lung diseases.
- Unusual (hyper) sensitivity to hexavalent chromium (chromium +6) salts.

SECTION 4 - FIRST AID

Eyes:

Immediately flush eyes thoroughly with water. Continue flushing eyes for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

Skin:

Wash skin with cool water and pH-neutral soap or a mild detergent intended for use on skin. Seek medical treatment in all cases of prolonged exposure to wet cement, cement mixtures, liquids from fresh cement products, or prolonged wet skin exposure to dry cement.

Inhalation of Airborne Dust:

Remove to fresh air. Seek medical help if coughing and other symptoms do not subside. Inhalation of gross amounts of Portland cement requires immediate medical attention.

Ingestion:

Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

SECTION 5 - FIRE & EXPLOSION DATA

Flash Point..... None
Lower Explosive Limit..... None
Upper Explosive Limit..... None
Auto Ignition Temperature..... Not Combustible
Extinguishing Media..... Not Combustible
Special Fire Fighting Procedures..... None

Although Portland cement poses no fire-related hazards, a self-contained breathing apparatus is recommended to limit exposure to combustion products when fighting any fire.

Hazardous Combustion Products..... None
Unusual Fire and Explosion Hazards..... None

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment as described in Section 8.

Scrape up wet material and place in an appropriate container. Allow the material to dry before disposal. Do not attempt to wash Portland cement down drains.

Dispose of waste material according to local, state and federal regulations.

SECTION 7 - HANDLING AND STORAGE

Keep Portland cement dry until used. Normal temperatures and pressures do not affect the material. Promptly remove dusty clothing or clothing which is wet with cement fluids and launder before reuse. Wash thoroughly after exposure to dust or wet cement mixtures or fluids.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Skin Protection:

Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened (wet) Portland cement products. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened Portland cement products might occur, wear impervious clothing and gloves to eliminate skin contact. Where required, wear boots that are impervious to water to eliminate foot and ankle exposure.

Do not rely on barrier creams; barrier creams should not be used in place of gloves.

Periodically wash areas contacted by dry Portland cement, by wet cement, or by concrete fluids with a pH neutral soap. Wash again at the end of the work. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with wet concrete, it should be removed and replaced with clean dry clothing.

Respiratory Protection:

Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits.

Use NIOSH/MSHA-approved (under 42 CFR 84) respirators in poorly ventilated areas, if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation. Advisory: Respirators and filters purchased after July 10, 1998 must be certified under 42 CFR 84.

Ventilation:

Use local exhaust or general dilution ventilation to control exposure within applicable limits.

Eye Protection:

When engaged in activities where cement dust or wet cement or concrete could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with Portland cement or fresh cement products.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Grey or White Powder
Odour	No Distinct Odour
Physical State	Solid (Powder)
pH in water (ASTM D 1293-95)	12 to 13
Solubility in Water	Slightly Soluble (0.1 to 1.0%)
Vapour Pressure	Not Applicable
Vapour Density	Not Applicable
Boiling Point	Not Applicable (i.e. > 1000°C)
Melting Point	Not Applicable
Specific Gravity (H_2O = 1.0)	3.15
Evaporation Rate	Not Applicable

SECTION 10 - STABILITY AND REACTIVITY

Stability:

Stable.

Conditions to Avoid:

Unintentional contact with water.

Incompatibility:

Wet Portland cement is alkaline. As such, it is incompatible with acids, ammonium salts and aluminum metal.

Hazardous Decomposition:

Will not spontaneously occur. Adding water results in hydration and produces (caustic) calcium hydroxide.

Hazardous Polymerization:

Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

For a description of available, more detailed toxicological information, contact the supplier or manufacturer.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

No recognized unusual toxicity to plants or animals.

Relevant Physical and Chemical Properties:

See Sections 9 and 10.

SECTION 13 - DISPOSAL

Dispose of waste material according to local, state, and federal regulations. Since Portland cement is stable, uncontaminated material may be saved for future use.

Dispose of bags in an approved landfill or incinerator.

SECTION 14 - TRANSPORTATION DATA

Hazardous Material Description/Proper Shipping Name:

Portland cement is not hazardous under U.S. Department of Transportation (DOT) regulations.

Hazard Class:

Not applicable.

Identification Number:

Not applicable.

Required Label Text:

Not applicable.

Hazardous Substances/Reportable Quantities (RQ):

Not applicable.

SECTION 15 - OTHER REGULATORY INFORMATION

Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200:

Portland cement is considered a hazardous chemical under this regulation, and should be part of any hazard communication program.

Status under CERCLA/Superfund, 40 CRF 117 and 302:

Not listed.

Hazard Category under SARA (Title III), Sections 311 and 312:

Portland cement qualifies as hazardous substance with delayed health effects under Sections 311 and 312.

Status under SARA (Title III), Section 313:

Not subject to reporting requirements under Section 313.

Status under TSCA (as of May 1997):

Some substances in Portland cement are on the TSCA inventory list.

Status under the Federal Hazardous Substances Act:

Portland cement is a hazardous substance subject to statutes promulgated under the subject act.

Status under California Proposition 65:

This product contains chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove that the defined risks do not exist.

Status under Canadian Environmental Protection Act:

Not listed.

Status under Workplace Hazardous Materials Information System (WHMIS):

Portland cement is considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class E – Corrosive Material) and is therefore subject to the labelling and MSDS requirements of WHMIS.

SECTION 16 - OTHER INFORMATION

Revision date: October 2004
Date of previous MSDS: November 2001

Portland cement should only be used by knowledgeable persons. A key to using the product safely requires the user to recognize that Portland cement chemically reacts with water, and that some of the intermediate products of this reaction (that is, those present while a Portland cement product is setting) pose a far more severe hazard than does Portland cement itself.

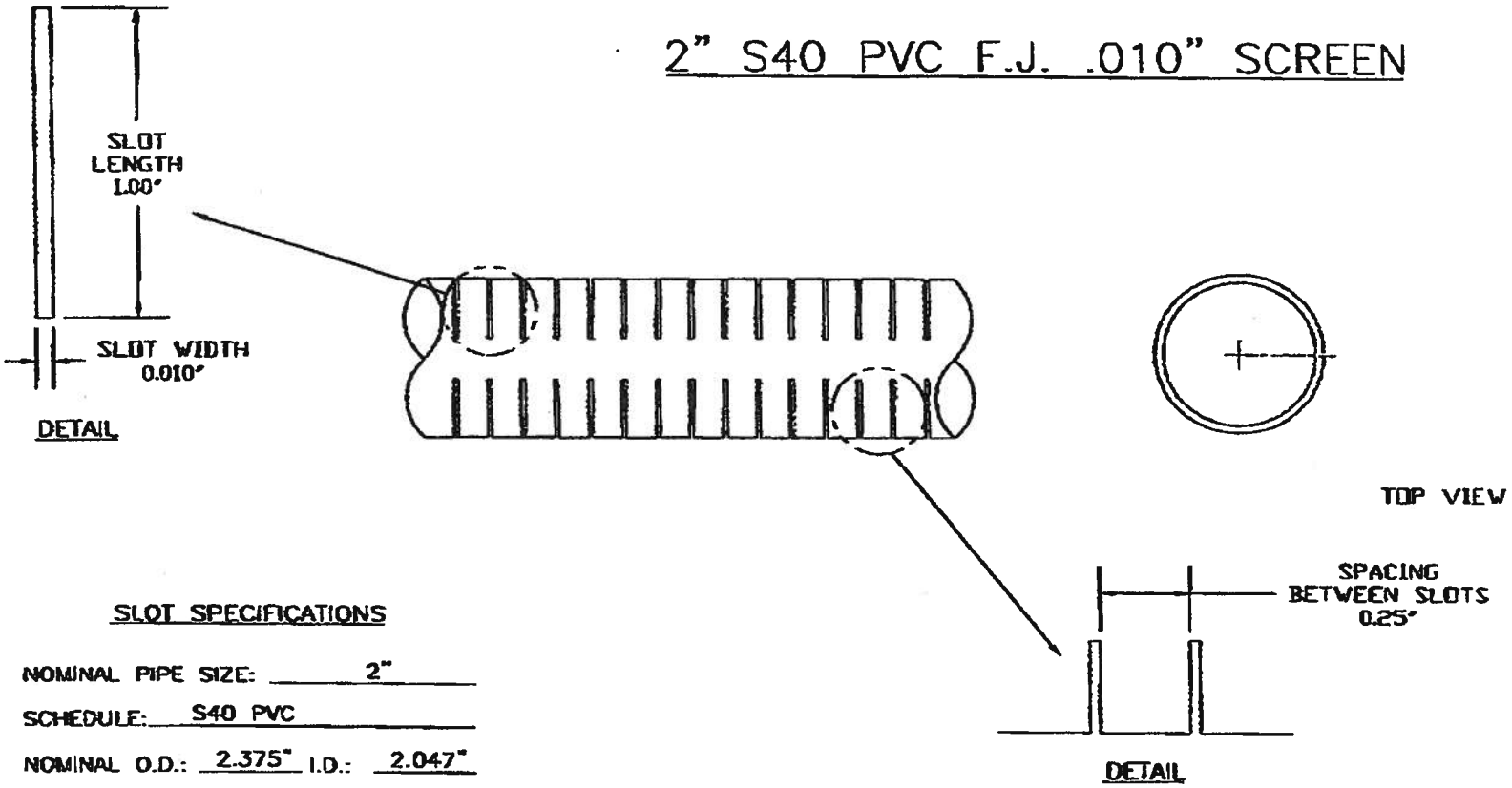
While the information provided in this material safety data sheet is believed to provide a useful summary of the hazards of Portland cement as it is commonly used, this sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product.

In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with Portland cement to produce Portland cement products. Users should review other relevant material safety data sheets before working with this Portland cement or working on Portland cement products, for example, Portland cement concrete.

SELLER MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY ST. MARYS CEMENT, EXCEPT THAT THE PRODUCT SHALL CONFORM TO CONTRACTED SPECIFICATIONS.

The information provided herein was believed by St. Marys Cement to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as for product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise, shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

2" S40 PVC F.J. .010" SCREEN



SLOT SPECIFICATIONS

NOMINAL PIPE SIZE: 2"

SCHEDULE: S40 PVC

NOMINAL O.D.: 2.375" I.D.: 2.047"

NOMINAL WALL THICKNESS: 0.156"

SLOT WIDTH: 0.010"

SPACING BETWEEN SLOTS: 0.25"

NUMBER OF ROWS: 4

ENDS: ASTM F-480 F.J.Threads

COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 8/2/2007

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

WE ARE SENDING YOU

	Specifications	X	Plans		Invoice
	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y_____ N__X____

Resubmittal of 014

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
023-014A	01300, P2.2.1	Utility Abandonment Plan-Revised	8/2/2007					

	For Review & Approval	X	For Your Use

Deviations: None from the referenced Specification noted.

REMARKS/NOTES: The Specification requirement for installation instructions is N/A
This is a resubmitall of 013.

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

UTILITY ABANDONMENT PLAN

During the course of the execution of field activities underground utilities will be encountered. The existing site drawings identify several utilities in areas that will be excavated. In addition to the site drawings, all utility companies that have utilities in the area were contacted and confirmed the location of their respective underground utilities. Due to the nature and age of the facility where field activities are being performed, it is anticipated that unmarked, abandoned utilities will be encountered.

For utilities where the location is known, extreme care will be exercised during excavation activities. A ground spotter will be utilized. Existing utilities encountered will be shored, braced or otherwise protected to ensure their continued service during and immediately after intrusive activities in their areas. Relocation of existing utility services is not contemplated under the existing scope of work.

Known utilities that are to be abandoned, specifically the water line and electrical runs in the wetlands area, will first be removed to the limits possible. They will then be grouted closed with non-shrink cement or closed as otherwise directed by the Resident Engineer.

If any unmarked utilities are encountered, the Resident Engineer will be immediately contacted to assess the situation. It is anticipated that any unmarked utilities encountered will not be "live". These will be closed in place at the direction of the Resident Engineer.

SPILL RESPONSE

In the event that a "spill" results during the course of excavation activities work in that area will immediately stop. The Resident Engineer will be notified and measures to contain the spill i.e. placement of absorbent boom and/or pads, will be taken. Attempts to contain/stop the source of the spill will take place immediately. Once the situation has been stabilized it will be evaluated to ascertain the best course of action at that time.

A "Spill Response" kit with a capacity of 55 gallons will be kept in the immediate vicinity of the excavation operation.

COMPASS ENVIRONMENTAL, INC.

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Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 8/6/2007

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

WE ARE SENDING YOU

X	Specifications	X	Plans		Invoice
X	Drawings		Reports		Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y ____ N X

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
024	15061A, P2.1-A,D,E,F	Manhole-Pumps, Guide Rails,Level Switches, Panel	8/6/2007					

	For Review & Approval	X	For Your Use

Deviations: None from the referenced Specification noted.

REMARKS/NOTES The Specification requirement for installation instructions is N/A
This is a resubmitall of 013.

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

ITT

Wastewater

Goulds Pumps

WS_BHF Series Model 3887BHF

Submersible Sewage Pump

Prosurance available for residential applications.

GOULDS PUMPS

FEATURES

- **Impeller:** Cast iron, enclosed, non-clog, dynamically balanced with pump out vanes for mechanical seal protection.
- **Casing:** Cast iron flanged volute type for maximum efficiency. Designed for easy installation on A10-20 slide rail or base elbow rail systems.
- **Mechanical Seal:** Silicon Carbide vs. Silicon Carbide sealing faces for superior abrasive resistance, stainless steel metal parts, BUNA-N elastomers.
- **Shaft:** Corrosion resistant, 300 series stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.
- **Fasteners:** 300 series stainless steel.
- Capable of running dry without damage to components.
- Designed for continuous operation, when fully submerged.

AGENCY LISTINGS

C SP US

Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association — File #LR38549

Goulds Pumps is ISO 9001 Registered.

Goulds Pumps is a brand of ITT Corporation.

www.goulds.com

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APPLICATIONS

Specifically designed for the following uses:

- Homes
- Water transfer
- Sewage systems
- Light industrial
- Dewatering/Effluent
- Commercial applications

Anywhere waste or drainage must be disposed of quickly, quietly and efficiently.

SPECIFICATIONS

Pump

- Solids handling capabilities: 2" maximum.
- Capacities: up to 220 GPM.
- Total heads: up to 81 feet TDH.
- Discharge size: 2" NPT threaded companion flange as standard. 3" option available but must be ordered separately. (Order no. A1-3)
- Temperature: 104°F (40°C) continuous
  140°F (60°C) intermittent.

MOTORS

- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer. All ratings are within the working limits of the motor.
- Class B insulation on ⅓-1½ HP models.
- Class F insulation on 2 HP models.

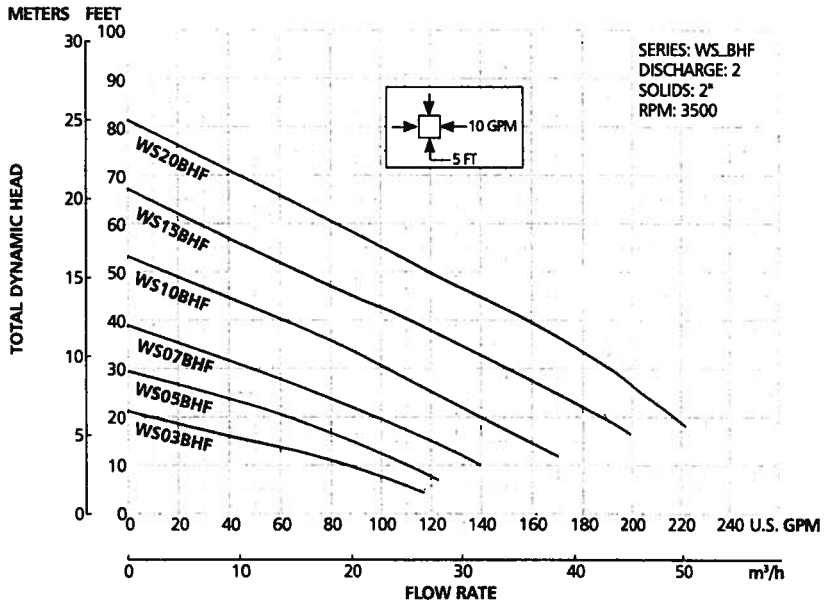
Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- ⅓ – 1 HP models have NEMA three prong grounding plugs.
- 1½ HP and larger units have bare lead cord ends.

Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.

- **Designed for Continous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- **Bearings:** Upper and lower heavy duty ball bearing construction.
- **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
- **Motor Cover O-ring:** Assures positive sealing against contaminant and oil leakage.

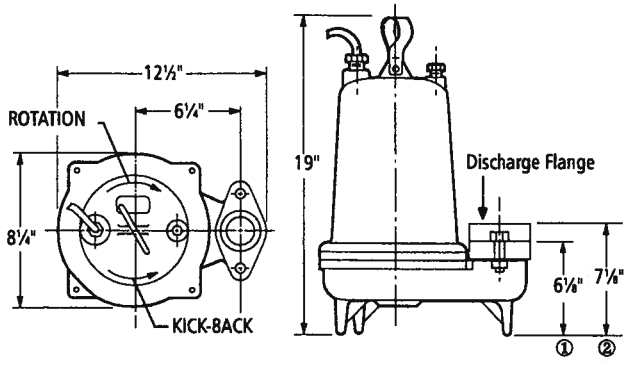


MOTOR AND MODEL INFORMATION

ORDER NUMBER	HP	PHASE	VOLTS	RPM	IMPELLER DIA. (IN.)	MAX. AMPS	LOCKED ROTOR AMPS	KVA CODE	FULL LOAD MOTOR EFF. %	RESISTANCE	
										START	LINE-LINE
WS0311BHF	0.33	1	115	3500	2.94	12.4	46.0	M	54	7.5	1.0
WS03188HF	0.33	1	208			6.8	31.0	K	68	9.7	2.4
WS0312BHF	0.33	1	230			6.2	34.5	M	53	9.6	4.0
WS05118HF	0.5	1	115		3.19	14.5	46.0	M	54	7.5	1.0
WS05188HF	0.5	1	208			8.4	31.0	K	68	9.7	2.4
WS05128HF	0.5	1	230			7.6	34.5	M	53	9.6	4.0
WS0538BHF	0.5	3	200			4.9	22.6	R	68	–	3.8
WS0532BHF	0.5	3	230			3.6	18.8	R	70	–	5.8
WS0534BHF	0.5	3	460			1.8	9.4	R	70	–	23.2
WS0537BHF	0.5	3	575			1.5	7.5	R	62	–	35.3
WS0718BHF	0.75	1	208		3.44	11.0	31.0	K	68	9.7	2.4
WS0712BHF	0.75	1	230			10.0	27.5	J	65	12.2	2.7
WS0738BHF	0.75	3	200			6.2	20.6	L	64	–	5.7
WS0732BHF	0.75	3	230			5.4	15.7	K	68	–	8.6
WS0734BHF	0.75	3	460			2.7	7.9	K	68	–	34.2
WS0737BHF	0.75	3	575			2.2	9.9	L	78	–	26.5
WS1018BHF	1	1	208		3.75	14.5	59.0	K	68	9.3	1.1
WS1012BHF	1	1	230			13.0	36.2	J	69	10.3	2.1
WS1038BHF	1	3	200			8.6	27.6	M	77	–	2.7
WS1032BHF	1	3	230			7.5	24.1	L	79	–	4.1
WS1034BHF	1	3	460			3.8	12.1	L	79	–	16.2
WS1037BHF	1	3	575			3.1	9.9	L	78	–	26.5
WS1512BHF	1.5	1	230		4.00	18.0	52.0	J	67	2.76	0.53
WS1538BHF	1.5	3	200			10.0	42.4	K	78	–	1.7
WS1532BHF	1.5	3	230			9.6	42.4	K	78	–	1.7
WS1534BHF	1.5	3	460			4.8	21.2	K	78	–	6.6
WS1537BHF	1.5	3	575			3.9	16.3	L	78	–	10.5
WS2012BHF	2	1	230		4.44	18.0	49.6	F	78	3.2	1.1
WS2038BHF	2	3	200			12.0	42.4	K	78	–	1.7
WS2032BHF	2	3	230			11.6	42.4	K	78	–	1.7
WS2034BHF	2	3	460			5.8	21.2	K	78	–	6.6
WS2037BHF	2	3	575			4.7	16.3	L	78	–	10.5

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



Discharge Flange:

① 2" NPT standard

② 3" NPT optional (order an A1-3)

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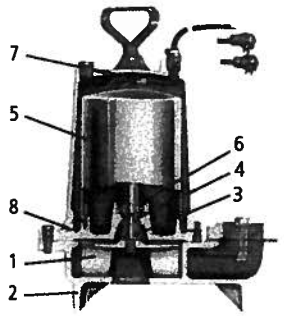
Wastewater

PERFORMANCE RATINGS (gallons per minute)

Order No.		WS03BHF	WS05BHF	WS07BHF	WS10BHF	WS15BHF	WS20BHF
HP ▶		⅓	½	¾	1	1½	2
RPM ▶		3500	3500	3500	3500	3500	3500
Total Head Feet of Water	10 ▶	86	110	140	–	–	–
	15	48	88	120	158	–	–
	20	–	62	98	139	186	217
	25	–	32	74	120	170	204
	30	–	–	49	101	150	190
	35	–	–	21	82	130	175
	40	–	–	–	60	110	159
	45	–	–	–	38	88	140
	50	–	–	–	–	67	120
	55	–	–	–	–	47	100
	60	–	–	–	–	29	80
	65	–	–	–	–	–	62
	70	–	–	–	–	–	43
	75	–	–	–	–	–	23

COMPONENTS *(for reference only)*

Item No.	Description
1	Impeller
2	Casing
3	Mechanical Seal
4	Motor Shaft
5	Motor
6	Ball Bearings
7	Power Cable
8	Casing O-Ring



** For repair parts, reference repair parts book.*

GOULDS PUMPS

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B3887BHF April, 2007

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Wastewater

CentriPro

GUIDE RAIL SYSTEMS

Stainless Steel

MODELS A10-12 (1¼"), A10-2015 (1½") AND A10-20 (2")

- Provide an easy means of removing pump from a wet-well by utilizing a quick disconnect and guide rail system.
- Connect directly to 1¼", 1½" or 2" vertical discharge Effluent, Wastewater and Grinder pumps.
- Adaptable to 1½" and 2" threaded, horizontal discharge pumps by using a street elbow.
- Two piece 96" long fabricated SS rail assembly (2 easily coupled 48" long pieces for shipping convenience and ease of handling).
- Corrosion resistant design.

STANDARD GUIDE RAIL COMPONENTS

- SS Guide rails, base, cross braces and pump brackets.
- SS Lifting cable, 96" long x 3/16" cable.
- Brass quick disconnect with o-ring seal.
- Schedule 40 galvanized discharge pipe. Optional stainless steel pipe nipples are available.
- Cast iron check valve with BUNA ball.
- SS Tee handle for shut-off valve is supplied (it is for use with the optional discharge pipe assemblies).

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Order Numbers / Quantity Required

System Type	Slide Rail Order Number	Quantity Required	Discharge Pipe Assembly Order No. ①	Quantity Required	Discharge Size (Inches)
Simplex	A10-12	1	H12S	1	1¼"
	A10-2015	1	H20S	1	1½"
	A10-20	1	H20S	1	2"
Duplex	A10-12	2	H12D	1	1¼"
	A10-2015	2	H20D	1	1½"
	A10-20	2	H20D	1	2"

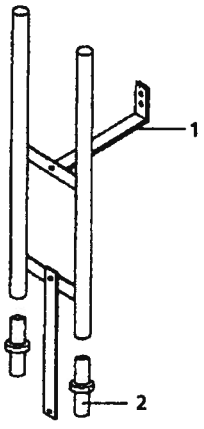
① Discharge Assembly is Optional but recommended.

Match the pump discharge size to the Guide Rail size, i.e. a pump with a 1½" discharge will use an A10-2015 which has a 1½" connection, a 2" pump matches to an A10-20, etc.

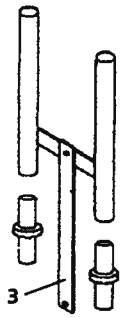
Pumps with horizontal threaded discharge connections may be connected to one of these guide rails with the addition of a street elbow.

Extension Kits Include

- Stainless steel wall bracket (1) – 1
- Guide rail connectors (2) – 2
- Stainless steel attachment brace (1) – 3
- Stainless steel nuts, bolts and washers
- A10-2048EXT – 48" extension is identical to the upper half of the standard guide rail pictured on page 4.

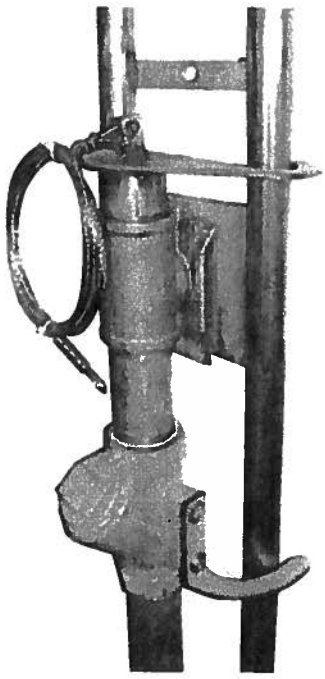


A10-2024EXT



A10-2012EXT

Order Number	Length
A10-2012 EXT	12"
A10-2024 EXT	24"
A10-2048 EXT	48"

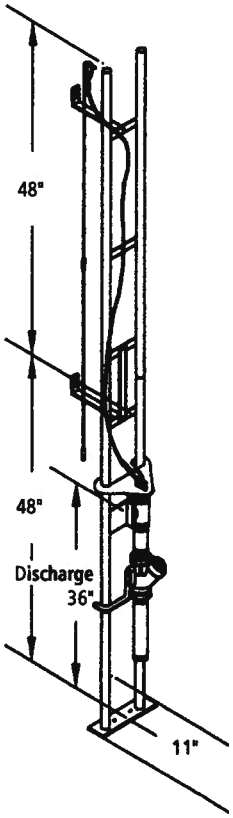


View of Lower Guide Rail showing Brass Disconnect, Ball Check Valve/Lower Pump Bracket Assembly, Lifting Cable and Upper Pump Bracket.

Optional Equipment

- Simplex discharge piping includes a union and a shut-off valve:
  H12S (1¼") discharge – use with **A10-12**;
  H20S (2") discharge – use with **A10-2015 or A10-20.**
- Duplex discharge piping includes (2) unions, (2) shut-off valves and a tee assembly; **H12D** (1¼") discharge – use with **A10-12**; **H20D** (2") discharge – use with **A10-2015** or **A10-20.**

Items in bold type are product Order Numbers.



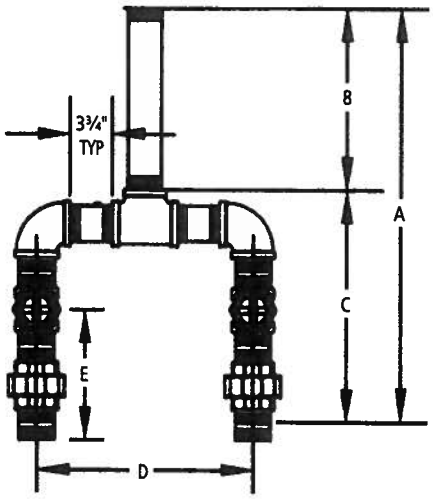
Discharge Pipe Assembly Materials		
Component	Standard Assembly	Optional Stainless Assembly
Pipes	Galvanized Steel	Stainless Steel
Elbow(s)		
Tee(s)		
Union(s)		
Check Valves	Cast Iron	Cast Iron
Gate Valves	Brass	Brass

Discharge Pipe Assemblies

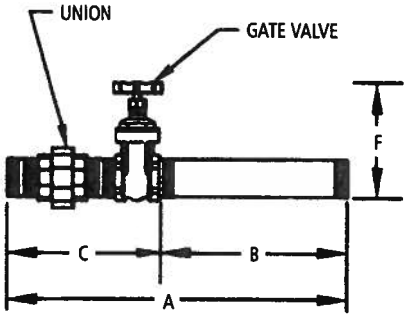
Dimension	Discharge Piping Order Number (dimensions in inches)			
	H12S	H20S	H12D	H20D
A	20	20	24	26
B	12	12	12	12
C	8	8	12	14
D	NA	NA	14	18
E	NA	NA	6	7
F	5.5	8	5.5	8

Simplex Discharge Assemblies H12S and H20S
Assembled kits contain a gate valve, union and pipe nipples. Ready for connection to the appropriate guide rail assembly.

Duplex Discharge Piping Assemblies H12D and H20D
Assembled kits contain (2) gate valves, (2) unions, a tee and (2) elbows. Ready for connection to the appropriate guide rail (2) assemblies.



Duplex Discharge Kit



Simplex Discharge Kit

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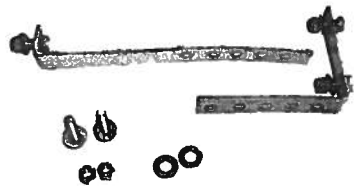
Wastewater

System Components and Dimension Chart for A10-12, A10-2015 and A10-20

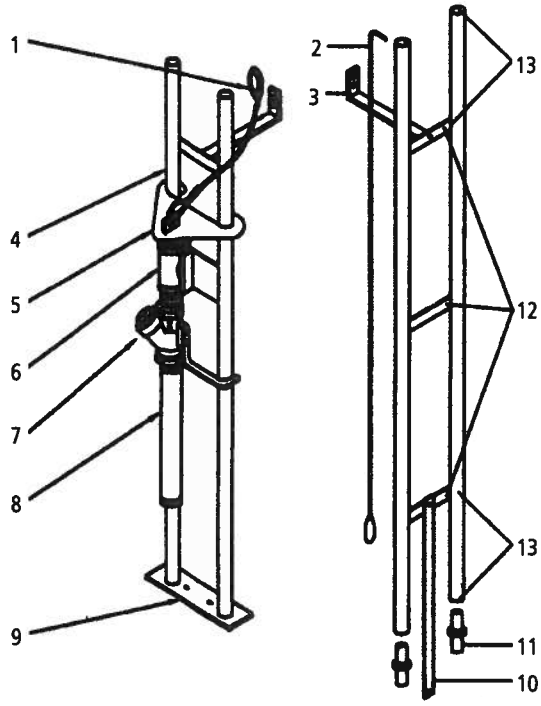
Item No.	Dimension	Descriptions and Quantities
1	3/16" x 96" long	Stainless steel lifting cable
2	47" long	Stainless steel valve extension handle
3	11" min. – 14" max.	Adjustable stainless steel wall (support) brackets (qty. 2) includes (5) 3/8" SS bolts, nuts and washers
4	1½" O.D.	Stainless steel guide rail tubing, 304 SS, 16 gauge
5	N/A	Stainless steel upper pump/guide bracket
6	1¼" (A10-12), 2" (A10-2015 & A10-20)	1¼" Brass quick disconnect assembly, 2" Brass quick disconnect assembly Discharge is 36" up from base to discharge centerline
7	1¼" (A10-12), 2" (A10-2015 & A10-20)	Cast iron ball check valve and lower pump bracket assembly with BUNA ball and clean-out port
8	1¼" (A10-12), 1½" x 2" (A10-2015), 2" (A10-20)	Schedule 40 galvanized discharge pipe (SS discharge pipes are available as a special order option)
9	11" wide (2) ½" holes	Base or stud mounting plate
10	11½" long, ½" hole and ½" x 1½" slot	SS attachment brace – connects the (2) 48" guide rail halves, includes (2) 3/8" SS bolts, nuts and washers
11	N/A	Plastic guide rail connectors (2) fit inside SS rails
12	18½" – 19" spacing	Stainless steel intermediate braces (3) on upper rail assembly
13	4½" – 5½" end to C/L	Upper and lower cross brace dimensions from end of rail

Stainless Steel Attachment Brace



Stainless Steel Wall Bracket Assembly

Valve End of Shut-Off Valve Handle



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BCPSSGR R3 January, 2007

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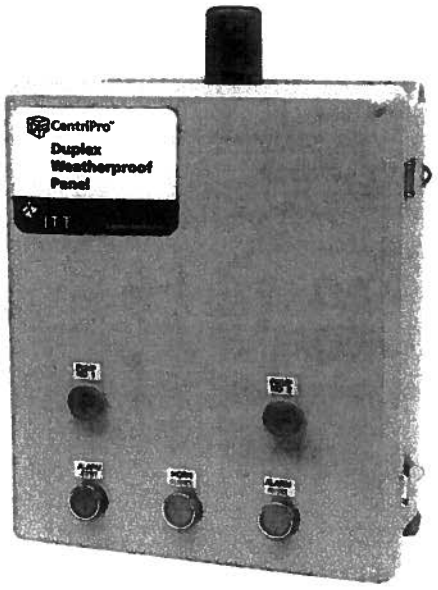
Wastewater

CentriPro

DUPLEX NEMA 4X WEATHERPROOF PANELS

Single and Three Phase Control Panels



FEATURES

- NEMA 4X, 30 watt, flashing red light and alarm horn – 95db.
- NEMA 4X, fiberglass enclosure with gasketed, hinged door and stainless steel hardware.

Single Phase

- Field adjustable for 115 or 230V, 60 Hz.
- 2 pump circuit breakers.

Three Phase

- Field adjustable for 208/230 /460/575V, 60 Hz.
- 115V control circuit transformer.
- 2 adjustable motor overload protectors.
- Heaters not required.

- Provides fully automatic operation for two pumps.
- Solid state pump alternator circuit displays float status for ease of installation and trouble shooting.
- Entire unit is UL and CUL listed.

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APPLICATIONS

Superior quality duplex liquid level controller, automatic alternation for two pump operation. High level alarm warning designed for a variety of sump, effluent, sewage and water transfer applications.

SPECIFICATIONS

- Accepts single or dual power feed.
- 2 hand-off-automatic (H-O-A) pump switches.
- On-off control circuit switch.
- 2 oversized magnetic contactors.
- Numbered terminal strip-screw type.
- **Float Switches – Note:** Please order float switches separately. We offer several types and models. See the Float Switch bulletin for available options. The type selected determines the quantity needed. The basin depth and panel location determine the required cord length. Contact your distributor or Customer Service for additional information.
- Electronic pump alternator.
- Alternator selector switch
- Lag pump start delay

FEATURES

- Rugged NEMA 4X construction withstands even the most severe weather conditions and prevents corrosion.
- Provides fully automatic operation for two pumps. Alternates pump starting to distribute operating time. Provides extra pumping capacity in times of high inflow by energizing both pumps.
- Hinged door with lockable stainless steel latch for safe operation indoors or out.
- High level alarm circuit includes through door mounted silence switch for manual silence of alarm horn.
- Through door mounted alarm test switch insures proper operation of the alarm circuit without the need to open the panel.
- 2 through door mounted pump run lights.
- Top mounted high intensity flashing red light provides 360° visibility.
- Pulsating, corrosion proof alarm horn.
- These duplex controls are factory wired for operation with three float bulbs. An easy field modification for four float bulb operation using separate "lag-on" and "alarm bulbs" is provided.
- Alternator selector switch allows a choice of automatic alternation or operation of only pump 1 or pump 2. Typically used if one pump is down for maintenance.
- Lag pump start delay built-in. Delays starting lag pump for 5 seconds if both pumps attempt to start simultaneously as after a power outage.
- Panel can be wired for a single power feed for pumps and control circuit or the control circuit can be wired to a separate power supply to insure alarm integrity in case of a tripped main breaker.
- Auxiliary alarm contacts provided for remote alarm connection.
- Color coded wiring, screw type terminals and plug in sockets, ensure ease of field servicing.
- Field wiring diagram, panel schematic and installation instructions included.

PANEL MODEL INFORMATION

SINGLE PHASE PANELS		THREE PHASE PANELS	
ORDER NUMBER	AMP RANGE	ORDER NUMBER	AMP RANGE
D10020	0-20	D31625	1.6 - 2.5
D12127	21-27	D32540	2.5 - 4.0
D12836	28-36	D34063	4.0 - 6.3
		D36310	6.3 - 10
		D31016	10 - 16
		D31620	16 - 20
		D32025	20 - 25

ADDITIONAL OPTIONS

Code (add as required)

A = Guaranteed pump submergence circuit

C = 115V condensation heater

D = Single phase lightning arrestor

E = Three phase lightning arrestor

G = Elapsed time meter (2) – Duplex

J = Seal fail circuit (2) – Duplex

L = Cycle counter (2) – Duplex

N = High temp. indicator with pump shutdown – Duplex

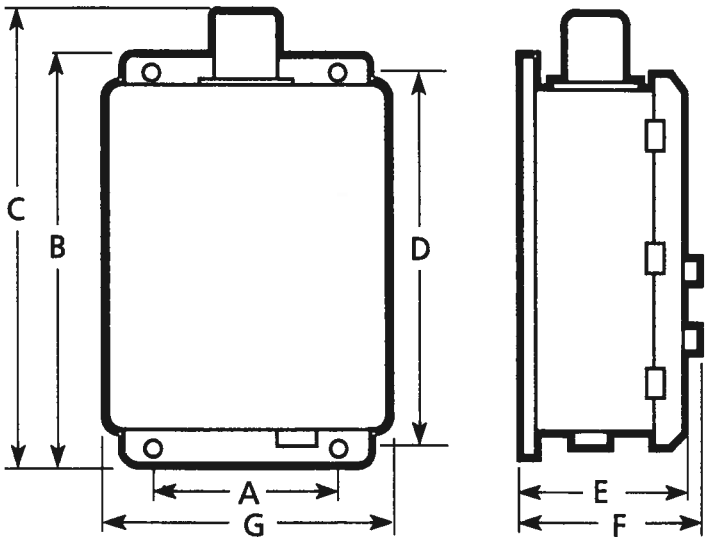
P = Special duplex Mini CAS seal fail and high temperature circuit for use on only three phase 15/20GD, 15/20GX and 1GA/2GA pumps.

When ordering options, add the appropriate code number as a suffix to the panel order number.

Example...D31625CG adds a cond. heater and (2) elapsed time meters.

ENCLOSURE DIMENSIONS (in inches)

Single Phase						
A	B	C	D	E	F	G
10.1	15.5	18.3	14.8	6.8	7.2	13.3
Three Phase						
A	B	C	D	E	F	G
12.1	17.5	20.3	16.8	6.8	7.2	15.3
NOTE: Mounting holes are ⅜".						



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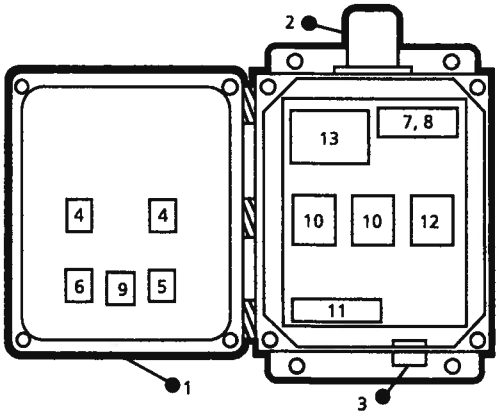
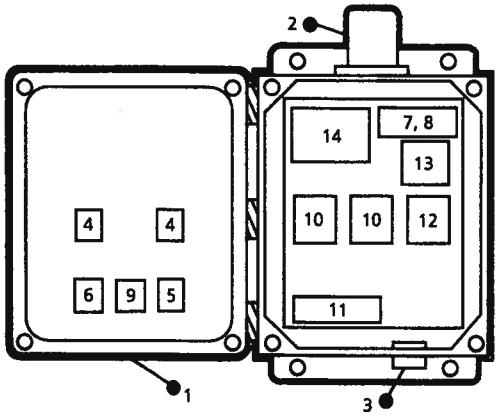
SINGLE PHASE COMPONENTS

1. NEMA 4X enclosure
2. Flashing alarm light
3. Alarm horn (RB50)
4. Pump run light
5. Alarm silence button
6. Alarm test button
7. Control power on/off switch
8. H-O-A switch
9. Alarm reset button
10. Contactor (RB32)
11. Terminal strip
12. Alternator circuit (RB75)
13. Motor circuit breakers

THREE PHASE COMPONENTS

1. NEMA 4X enclosure
2. Flashing alarm light
3. Alarm horn (RB50)
4. Pump run light
5. Alarm silence button
6. Alarm test button
7. Control power on/off switch
8. H-O-A switch
9. Alarm reset button
10. Contactor (RB47)
11. Terminal strip
12. Alternator circuit (RB75)
13. Control transformer
14. Motor circuit protectors (RB52 through 57)





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BCP4 R3 November, 2006

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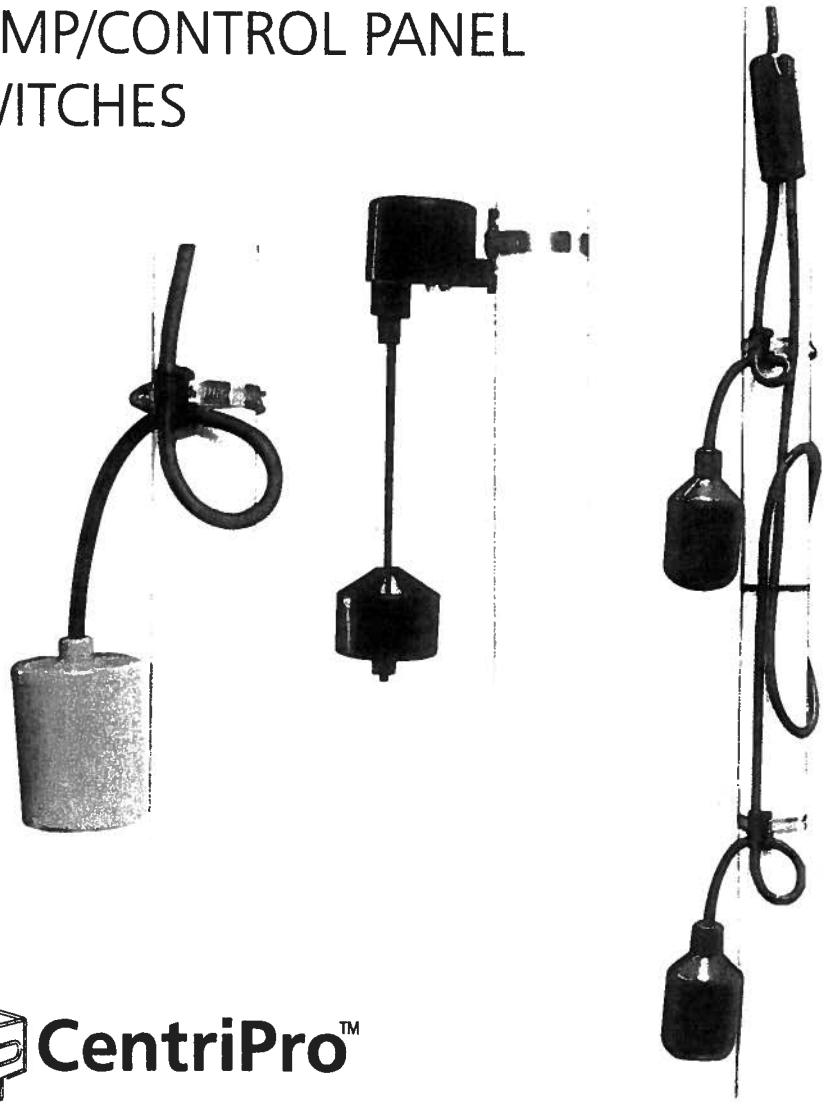
PUMP/CONTROL PANEL SWITCHES



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TERMS TO KNOW

Pump Switches are used to directly control the operation of a pump. They are normally wide-angle switches which means they operate over a range of approximately 70° to 90°. Pump switches are available with piggyback plugs and with bare leads. Some can also be used with control panels.

Control Switches are designed to only control pumps when used with a control or alarm panel. They cannot handle the high starting amps and running amperage of a pump, only signal or control amperage.

NO or Normally Open is a switch with contacts that are open in the hanging position. They are used to pump down or empty a tank.

NC or Normally Closed is a switch with contacts that are closed in the hanging position. They are used to pump up or fill a tank.

A2T SERIES

SJE Double Float® Master Pump Switch

Features

- Mechanically activated, wide-angle switch designed to control pumps up to 13 FLA, 78 LRA, 120 VAC or 240 VAC.
- This switch consists of two mechanical floats and a splice tube. The splice tube contains a holding relay which eliminates pump chatter in turbulent conditions.
- Includes standard mounting clamps and boxed packaging.
- **Cable attached to float housing:** flexible 16 gauge, 2 conductor (UL, CSA) SJOW, water-resistant (CPE).
- **Cable above splice:** flexible 14 gauge, 3 conductor (UL, CSA) SJTW, water-resistant, thermoplastic.
- **Floats:** 2.74" diameter x 4.83" long (7.0 x 12.3 cm) high impact, corrosion resistant, PP housing for use in sewage and non-potable water up to 140° F (60° C).
- Not sensitive to rotation or turbulence.
- Pumping range: 10" to 56".
- Available for pump up or pump down applications.
- For confined applications requiring an accurate pumping range.
- UL Recognized for use in non-potable water and sewage.
- CSA Certified.
- See chart for data and order numbers.

A2X SERIES

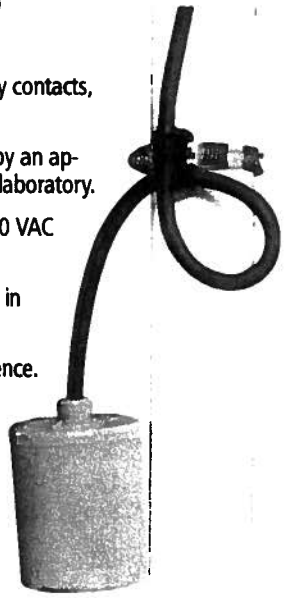
MilliAmpMaster™ Mechanical Float Switch

Features

- Mechanically activated, snap-action, sealed gold cross-point contacts are designed to activate low current control panels and alarms.
- Narrow angle Control for Low Voltage AC or DC applications.
- Operate with differential of 45° above or below horizontal.
- Electrical Load – low current non-arcing applications
  - 125 VAC – Max. Load .1 amps (Min. Load .16 milliamps)
  - 30 VDC – Max. Load .1 amps (Min. Load .16 milliamps)
  - 5 VDC - Minimum Load 1 milliamp
- UL Listed for use in non-potable water and sewage.
- CSA Certified
- Mounting clamp for attaching to discharge pipe is standard.
- Not sensitive to rotation.
- Maximum submergence or water depth, 30' (9 meters), 13 psi.
- Flexible 18 gauge, 2 conductor SJOW water resistant cable.
- Impact and corrosion resistant, polypropylene float housing for use in sewage and water up to 140 ° F.
- Use with Intrinsically Safe Barriers (as used with explosion-proof pumps), PLC's, solar applications and other low current control panel or alarm applications.
- Cable lengths of 10', 20' and 30'.
- Standard order numbers are for Normally Open (NO) switches.
- Normally Closed (NC) or Pump Down switches are available as a special order by adding a "U" suffix. **See Nomenclature on last page.**

A2D SERIES

SJE PumpMaster® Pump Switch



Features

- Mechanically activated, heavy duty contacts, wide angle operation.
- Passed NSF standard 61 protocol by an approved Water Quality Association laboratory.
- Controls pumps up to 1/2 HP at 120 VAC and 1 HP at 230 VAC.
- Non-corrosive PVC housing for use in liquids up to 140° F (60° C).
- Not sensitive to rotation or turbulence.
- Pumping range: 7" to 36".
- 16 AWG, SJOW cord is available with or without piggyback plug.
- Available as pump up, pump down and SPDT models, see Nomenclature Chart.
- For potable water, water or sewage applications.
- UL Recognized for use in water and sewage.
- CSA Certified.
- See chart for amperage range and other data.

A2E SERIES

SJE PumpMaster Plus® Pump Switch

Features

- Controls pumps up to ¾ HP at 120 VAC and 2 HP at 230 VAC.
- 14 AWG, SJOW cord is available with or without piggyback plug.
- ***All other features are the same as A2D PumpMaster Series above.***

A2HT SERIES

High Temperature Float Switch

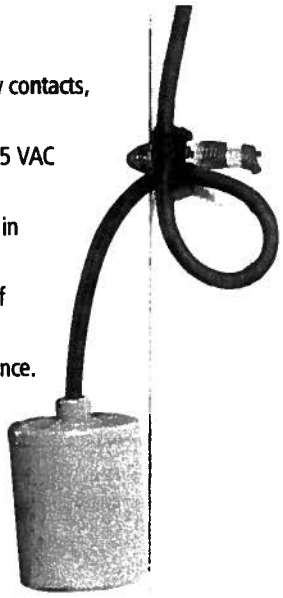
Features

- Temperature Rating: 221° F (105° C)
- Wide Angle Switch: contacts open @ 45° below horizontal and close at 45° above horizontal
- Float Material: PC/ABS (Polycarbonate ABS)
- Cord Material: Teflon coating
- Ratings: 13 Maximum Amps, ½ HP, 115/230 V
- Float Dimensions: 4.63" Long x 2.63" Diameter
- Nomenclature: see last page
- Available lengths: 20', 30' and 50' *

** No other lengths available in this Series.*

A2G SERIES

SJE AmpMaster® Pump Switch



Features

- Mechanically activated, heavy duty contacts, wide angle operation.
- Controls pumps up to 1½ HP at 125 VAC and 3 HP at 250 VAC.
- Non-corrosive PVC housing for use in liquids up to 140° F (60° C).
- Maximum pump running current of 20 amps.
- Not sensitive to rotation or turbulence.
- Pumping range: 9" to 24".
- 12 AWG, SJOW cord is available only with bare leads.
- Available for pump down applications only.
- UL Recognized for use in non-potable water and sewage.
- CSA Certified.
- See chart for amperage range and other data.

A2H SERIES

SJE VerticalMaster® Pump Switch

Features

- Mechanically activated vertical operation.
- Controls pumps up to ½ HP at 120 VAC and 1 HP at 230 VAC.
- Non-corrosive PVC housing for use in liquids up to 140° F (60° C).
- Overall Dimensions: 12" High, 5" Deep, 3" Wide.
- Not sensitive to rotation.
- Pumping range: .75" to 6.5".
- 16 AWG, SJOW cord is available with or without piggyback plug.
- Available for pump down applications only.
- For confined applications requiring an accurate pumping range.
- Stainless steel mounting bracket and hose clamp.
- UL Recognized for use in non-potable water and sewage.
- CSA Certified.
- See chart for amperage range and other data.

A2N SERIES

SJE SignalMaster® Control Switch

Features

- Mechanically activated, narrow angle, designed to activate pump control panels or alarms.
- Not designed for direct connection to pump.
- Passed NSF standard 61 protocol by an approved Water Quality Association laboratory.
- Non-corrosive PVC housing for use in liquids up to 140° F (60° C).
- Not sensitive to rotation.
- Control differential: 1.5" above or below horizontal.
- Available as NO (pump down), NC (pump up) or SPDT model, see Nomenclature page.
- For potable water, water or sewage applications.
- Supplied with a pipe clamp for mounting to pipe.
- UL Listed for use in water and sewage.
- CSA Certified.
- See chart for amperage range and other data.

A2S SERIES

CentriPro™ Diaphragm Pump or Control Switch

Features

- Mechanical contacts.
- Cast iron housing and BUNA-N diaphragm.
- For use in liquids up to 104° F (40° C).
- Control differential: pump turns on at 18" and off at 12" submergence.
- 18/3 AWG, SJTW cord w/breather tube is available with or without piggyback plug.
- Available only as NO for pump down operation.
- For wastewater or sewage applications.
- Supplied with a mounting bracket for mounting to pump.
- See chart for amperage range and other data.

A2WT SJ ELECTRO WEIGHT

- Adjustable snap in design.
- Works with all float switches shown.
- PVC

A2WTC CONERY WEIGHT

- Zinc plated cord weight
- Works with all float switches

PUMP SWITCHES (WIDE ANGLE) can be connected directly to a pump.
CONTROL SWITCHES (NARROW ANGLE) can only be used with control panels or alarm panels.

ORDER NUMBER	MAXIMUM RUNNING AMPS	MAXIMUM STARTING AMPS	CORD LENGTH (FEET)	BARE LEADS	PUMP SWITCH	CONTROL SWITCH	(1) N.O.	(2) N.C.	MOUNTING STRAP	MOUNTING WEIGHT
A2D13	13	85	10	X	X	—	X		X	
A2D23U	13	85	15	X	X	—		X	X	
A2D23W	13	85	15	X	X	—	X			X
A2D33	13	85	20	X	X	—	X		X	
A2D33U	13	85	20	X	X	—		X	X	
A2D33W	13	85	20	X	X	—	X			X
A2D53W	13	85	30	X	X	—	X			X
A2D63W	13	85	50	X	X	—	X			X
A2D83W	13	85	100	X	X	—	X			X
A2E23	15	85	15	X	X	—	X		X	
A2E23U	15	85	15	X	X	—		X	X	
A2E33	15	85	20	X	X	—	X		X	
A2E53	15	85	30	X	X	—	X		X	
A2E53U	15	85	30	X	X	—		X	X	
A2E63	15	85	50	X	X	—	X		X	
A2E63U	15	85	50	X	X	—		X	X	
A2E73	15	85	75	X	X	—	X		X	
A2E83	15	85	100	X	X	—	X		X	
A2G33	20	120	20	X	X	—	X		X	
A2G43	20	120	25	X	X	—	X		X	
A2G53	20	120	30	X	X	—	X		X	
A2G63	20	120	50	X	X	—	X		X	
A2HT33	13	58	20	X	X	X	X		X	
A2HT53	13	58	30	X	X	X	X		X	
A2HT63	13	58	50	X	X	X	X		X	
A2N13	5	N/A	10	X	—	X	X		X	
A2N33	5	N/A	20	X	—	X	X		X	
A2N33U	5	N/A	20	X	—	X		X	X	
A2N93	5	N/A	125	X	—	X	X		X	
A2S23[D]	10	N/A	15	X	—	X	X		X	
A2S53[D]	10	N/A	30	X	—	X	X		X	
A2S63[D]	10	N/A	50	X	—	X	X		X	
A2X13	See description	N/A	10	X	—	X	X		X	
A2X33	See description	N/A	20	X	—	X	X		X	
A2X53	See description	N/A	30	X	—	X	X		X	

N.O. (1) = PUMP DOWN
N.C. (2) = PUMP UP

[D] Diaphragm switch with 6" differential.

WIDE ANGLE 115 VOLT PIGGYBACK FLOAT SWITCHES TO DIRECTLY CONTROL PUMPS

ORDER NUMBER	MAXIMUM AMPS	START AMPS	115 V PLUG	CORD LENGTH FEET	(1) N.O.	(2) N.C.	MOUNTING STRAP
A2D11	13	85	X	10	X		X
A2D31	13	85	X	20	X		X
A2D51	13	85	X	30	X		X
A2D61	13	85	X	50	X		X
A2E21	15	85	X	15	X		X
A2E31	15	85	X	20	X		X
A2E31U	15	85	X	20		X	X
A2E51	15	85	X	30	X		X
A2E61	15	85	X	50	X		X
A2H11	13	60	X	10	X		X
A2H31	13	60	X	20	X		X
A2S21	13	60	X	15	X		X
A2T31	13	78	X	20	X		X
A2T51	13	78	X	30	X		X

WIDE ANGLE 230 VOLT PIGGYBACK FLOAT SWITCHES TO DIRECTLY CONTROL PUMPS

ORDER NUMBER	MAXIMUM AMPS	START AMPS	230 V PLUG	CORD LENGTH FEET	(1) N.O.	(2) N.C.	MOUNTING STRAP
A2D12	13	85	X	10	X		X
A2D32	13	85	X	20	X		X
A2E22	15	85	X	15	X		X
A2E32	15	85	X	20	X		X
A2E32U	15	85	X	20		X	X
A2E52	15	85	X	30	X		X
A2E62	15	85	X	50	X		X
A2H12	12	60	X	10	X		X
A2H32	12	60	X	20	X		X
A2S22	13	60	X	15	X		X
A2T32	13	78	X	20	X		X
A2T52	13	78	X	30	X		X

N.O. (1) = PUMP DOWN
N.C. (2) = PUMP UP

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NOMENCLATURE

1st and 2nd Characters
A2 = Float Switch

3rd Character
D = PumpMaster® – SJE
E = PumpMaster Plus® – SJE
G = AmpMaster® – SJE
H = VerticalMaster® – SJE
J = VerticalMaster® II – SJE ②
N = SignalMaster™ – SJE
P = MicroMaster® Plus – SJE ②
R = MicroMaster® – SJE ②
S = C I Diaphragm Level Switch – MP
T = Double Float® Master – SJE
X = MilliAmpMaster™

4th Character
1 = 10'
2 = 15' ①
3 = 20'
4 = 25' ①
5 = 30'
6 = 50'
7 = 75'
8 = 100'
9 = 125'
Only available on select control switches.

5th Character
1 = 115 V piggyback
2 = 230 V piggyback
3 = Bare lead
4 = Single pole double throw (SPDT)

6th Character (optional)
U = Pump Up or Normally Closed (NC)
W = A2WT Cable Weight
B = Bulk Packed (internal only)

Characters 1 -4
A2HT = High Temperature Float Switch

Character 5 *
Length (ft)
3 = 20'
5 = 30'
6 = 50'

Character 6
1 = 115V Piggyback Plug
2 = 230V Piggyback Plug
3 = Bare Leads
4 = Single Pole Double Throw (SPDT)

** No other lengths available in this Series.*

① Only available on existing models.
② Discontinued models – contained mercury.

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BCPFS R4 March, 2007
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From: Jerry Resnik-Compass Environmental

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

DATE: 8/7/2007

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports	X	Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y _____ N X

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
025	02210, P1.4	Aggregate Fill-Analytical	8/7/2007					

	For Review & Approval		For Your Use
X			

Deviations: None from the referenced Specification noted.

REMARKS/NOTES

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

WASTE STREAM TECHNOLOGY, INC.

302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report
Report Date: 07/31/07
Work Order Number: 7G24009

Prepared For
Gary Nelson
Buffalo Crushed Stone
P.O. Box 710
Buffalo, NY 14227
Fax: (716) 683-8040

Site: Wellsville Refinery

Enclosed are the results of analyses for samples received by the laboratory on 07/24/07. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian S. Schepart, Ph.D., Laboratory Director

ENVIRONMENTAL LABORATORY ACCREDITATION CERTIFICATION NUMBERS
NYSDOH ELAP #11179 NJDEPE #73977 PADEP #68757 CTDPH #PH-0306 MADEP #M-NY068

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Buffalo Crushed Stone P.O. Box 710 Buffalo NY, 14227	Project: CertainTeed Project Number: Wellsville Refinery Project Manager: Gary Nelson	Reported: 07/31/07 16:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
De-con Pad	7G24009-01	Solid	07/24/07 11:00	07/24/07 15:00
Pipe Embedment	7G24009-02	Solid	07/24/07 12:00	07/24/07 15:00
Aggregate Backfill	7G24009-03	Solid	07/24/07 12:00	07/24/07 15:00

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Metals by EPA 6000/7000 Series Methods

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
De-con Pad (7G24009-01) Solid Sampled: 07/24/07 11:00 Received: 07/24/07 15:00									
Silver	ND	0.50	mg/kg dry	1	AG73015	07/30/07	07/30/07	EPA 6010B	
Arsenic	ND	1.70	"	"	"	"	07/30/07	"	U
Cadmium	ND	1.00	"	"	"	"	"	"	
Chromium	1.29	1.00	"	"	"	"	"	"	
Copper	3.70	1.00	"	"	"	"	07/30/07	"	B
Iron	777	8.30	"	"	"	"	"	"	
Mercury	0.027	0.012	"	"	AG72709	07/27/07	07/27/07	EPA 7471A	
Manganese	30.8	1.00	"	"	AG73015	07/30/07	07/30/07	EPA 6010B	
Nickel	3.04	1.00	"	"	"	"	07/30/07	"	
Lead	ND	4.10	"	"	"	"	"	"	
Zinc	ND	4.00	"	"	"	"	"	"	
Pipe Embedment (7G24009-02) Solid Sampled: 07/24/07 12:00 Received: 07/24/07 15:00									
Silver	ND	0.50	mg/kg dry	1	AG73015	07/30/07	07/30/07	EPA 6010B	
Arsenic	ND	1.70	"	"	"	"	"	"	
Cadmium	ND	1.00	"	"	"	"	"	"	
Chromium	2.25	1.00	"	"	"	"	"	"	
Copper	4.29	1.00	"	"	"	"	"	"	B
Iron	3760	8.30	"	"	"	"	07/30/07	"	
Mercury	0.039	0.012	"	"	AG72709	07/27/07	07/27/07	EPA 7471A	
Manganese	129	1.00	"	"	AG73015	07/30/07	07/30/07	EPA 6010B	
Nickel	4.22	1.00	"	"	"	"	07/30/07	"	
Lead	ND	4.10	"	"	"	"	"	"	
Zinc	18.5	4.00	"	"	"	"	"	"	

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Buffalo Crushed Stone P.O. Box 710 Buffalo NY, 14227	Project: CertainTeed Project Number: Wellsville Refinery Project Manager: Gary Nelson	Reported: 07/31/07 16:44

Metals by EPA 6000/7000 Series Methods

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aggregate Backfill (7G24009-03) Solid Sampled: 07/24/07 12:00 Received: 07/24/07 15:00									
Silver	ND	0.50	mg/kg dry	1	AG73015	07/30/07	07/30/07	EPA 6010B	
Arsenic	3.20	1.70	"	"	"	"	07/30/07	"	
Cadmium	ND	1.00	"	"	"	"	"	"	
Chromium	7.17	1.00	"	"	"	"	"	"	
Copper	112	1.00	"	"	"	"	07/30/07	"	
Iron	11400	8.30	"	"	"	"	"	"	
Mercury	0.068	0.012	"	"	AG72709	07/27/07	07/27/07	EPA 7471A	
Manganese	1400	1.00	"	"	AG73015	07/30/07	07/30/07	EPA 6010B	
Nickel	12.1	1.00	"	"	"	"	07/30/07	"	
Lead	7.13	4.10	"	"	"	"	"	"	
Zinc	30.6	4.00	"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Organochlorine Pesticides and PCBs by EPA Methods 8081A /8082

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
De-con Pad (7G24009-01) Solid Sampled: 07/24/07 11:00 Received: 07/24/07 15:00									
Alpha-BHC	ND	0.400	ug/kg dry	1	AG73013	07/30/07	07/31/07	8081A/8082	U
Beta-BHC	ND	0.400	"	"	"	"	"	"	U
Gamma-BHC (Lindane)	ND	0.400	"	"	"	"	"	"	U
Delta-BHC	ND	0.400	"	"	"	"	"	"	U
Heptachlor	ND	0.400	"	"	"	"	"	"	U
Aldrin	ND	0.400	"	"	"	"	"	"	U
Heptachlor Epoxide	ND	0.400	"	"	"	"	"	"	U
Endosulfan I	ND	0.400	"	"	"	"	"	"	U
Dieldrin	ND	0.400	"	"	"	"	"	"	U
4,4'-DDE	ND	0.400	"	"	"	"	"	"	U
Endrin	ND	0.400	"	"	"	"	"	"	U
Endosulfan II	ND	0.400	"	"	"	"	"	"	U
4,4'-DDD	ND	0.400	"	"	"	"	"	"	U
Endrin Aldehyde	ND	0.400	"	"	"	"	"	"	U
Endosulfan Sulfate	ND	0.400	"	"	"	"	"	"	U
4,4'-DDT	ND	0.400	"	"	"	"	"	"	U
Endrin Ketone	ND	0.400	"	"	"	"	"	"	U
Methoxychlor	ND	0.400	"	"	"	"	"	"	U
Chlordane	ND	6.70	"	"	"	"	"	"	U
Toxaphene	ND	8.30	"	"	"	"	"	"	U
Aroclor 1016	ND	3.30	"	"	"	"	"	"	U
Aroclor 1221	ND	3.30	"	"	"	"	"	"	U
Aroclor 1232	ND	3.30	"	"	"	"	"	"	U
Aroclor 1242	ND	3.30	"	"	"	"	"	"	U
Aroclor 1248	ND	3.30	"	"	"	"	"	"	U
Aroclor 1254	ND	3.30	"	"	"	"	"	"	U
Aroclor 1260	ND	3.30	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*98.2 %*	*61-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*91.6 %*	*56-136*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Buffalo Crushed Stone P.O. Box 710 Buffalo NY, 14227	Project: CertainTeed Project Number: Wellsville Refinery Project Manager: Gary Nelson	Reported: 07/31/07 16:44

Organochlorine Pesticides and PCBs by EPA Methods 8081A /8082

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pipe Embedment (7G24009-02) Solid Sampled: 07/24/07 12:00 Received: 07/24/07 15:00									
Alpha-BHC	ND	0.400	ug/kg dry	1	AG73013	07/30/07	07/31/07	8081A/8082	U
Beta-BHC	ND	0.400	"	"	"	"	"	"	U
Gamma-BHC (Lindane)	ND	0.400	"	"	"	"	"	"	U
Delta-BHC	ND	0.400	"	"	"	"	"	"	U
Heptachlor	ND	0.400	"	"	"	"	"	"	U
Aldrin	ND	0.400	"	"	"	"	"	"	U
Heptachlor Epoxide	ND	0.400	"	"	"	"	"	"	U
Endosulfan I	ND	0.400	"	"	"	"	"	"	U
Dieldrin	ND	0.400	"	"	"	"	"	"	U
4,4'-DDE	ND	0.400	"	"	"	"	"	"	U
Endrin	ND	0.400	"	"	"	"	"	"	U
Endosulfan II	ND	0.400	"	"	"	"	"	"	U
4,4'-DDD	ND	0.400	"	"	"	"	"	"	U
Endrin Aldehyde	ND	0.400	"	"	"	"	"	"	U
Endosulfan Sulfate	ND	0.400	"	"	"	"	"	"	U
4,4'-DDT	ND	0.400	"	"	"	"	"	"	U
Endrin Ketone	ND	0.400	"	"	"	"	"	"	U
Methoxychlor	ND	0.400	"	"	"	"	"	"	U
Chlordane	ND	6.70	"	"	"	"	"	"	U
Toxaphene	ND	8.30	"	"	"	"	"	"	U
Aroclor 1016	ND	3.30	"	"	"	"	"	"	U
Aroclor 1221	ND	3.30	"	"	"	"	"	"	U
Aroclor 1232	ND	3.30	"	"	"	"	"	"	U
Aroclor 1242	ND	3.30	"	"	"	"	"	"	U
Aroclor 1248	ND	3.30	"	"	"	"	"	"	U
Aroclor 1254	ND	3.30	"	"	"	"	"	"	U
Aroclor 1260	ND	3.30	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*101 %*	*61-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*105 %*	*56-136*		"	"	"	"	

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Buffalo Crushed Stone	Project: CertainTeed	
P.O. Box 710	Project Number: Wellsville Refinery	Reported:
Buffalo NY, 14227	Project Manager: Gary Nelson	07/31/07 16:44

Organochlorine Pesticides and PCBs by EPA Methods 8081A /8082

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aggregate Backfill (7G24009-03) Solid	**Sampled: 07/24/07 12:00**		**Received: 07/24/07 15:00**						
Alpha-BHC	ND	0.400	ug/kg dry	1	AG73013	07/30/07	07/31/07	8081A/8082	U
Beta-BHC	ND	0.400	"	"	"	"	"	"	U
Gamma-BHC (Lindane)	ND	0.400	"	"	"	"	"	"	U
Delta-BHC	ND	0.400	"	"	"	"	"	"	U
Heptachlor	ND	0.400	"	"	"	"	"	"	U
Aldrin	ND	0.400	"	"	"	"	"	"	U
Heptachlor Epoxide	ND	0.400	"	"	"	"	"	"	U
Endosulfan I	ND	0.400	"	"	"	"	"	"	U
Dieldrin	ND	0.400	"	"	"	"	"	"	U
4,4'-DDE	ND	0.400	"	"	"	"	"	"	U
Endrin	ND	0.400	"	"	"	"	"	"	U
Endosulfan II	ND	0.400	"	"	"	"	"	"	U
4,4'-DDD	ND	0.400	"	"	"	"	"	"	U
Endrin Aldehyde	ND	0.400	"	"	"	"	"	"	U
Endosulfan Sulfate	ND	0.400	"	"	"	"	"	"	U
4,4'-DDT	ND	0.400	"	"	"	"	"	"	U
Endrin Ketone	ND	0.400	"	"	"	"	"	"	U
Methoxychlor	ND	0.400	"	"	"	"	"	"	U
Chlordane	ND	6.70	"	"	"	"	"	"	U
Toxaphene	ND	8.30	"	"	"	"	"	"	U
Aroclor 1016	ND	3.30	"	"	"	"	"	"	U
Aroclor 1221	ND	3.30	"	"	"	"	"	"	U
Aroclor 1232	ND	3.30	"	"	"	"	"	"	U
Aroclor 1242	ND	3.30	"	"	"	"	"	"	U
Aroclor 1248	ND	3.30	"	"	"	"	"	"	U
Aroclor 1254	ND	3.30	"	"	"	"	"	"	U
Aroclor 1260	ND	3.30	"	"	"	"	"	"	U
Surrogate: Tetrachloro-meta-xylene		*95.1 %*	*61-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*93.3 %*	*56-136*		"	"	"	"	

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Buffalo Crushed Stone	Project: CertainTeed	
P.O. Box 710	Project Number: Wellsville Refinery	**Reported:**
Buffalo NY, 14227	Project Manager: Gary Nelson	07/31/07 16:44

Volatile Organic Compounds by EPA Method 8260B

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
De-con Pad (7G24009-01) Solid Sampled: 07/24/07 11:00 Received: 07/24/07 15:00									
dichlorodifluoromethane	ND	9	ug/kg dry	1	AG72501	07/25/07	07/25/07	8260	U
chloromethane	ND	9	"	"	"	"	"	"	U
vinyl chloride	ND	9	"	"	"	"	"	"	U
bromomethane	ND	9	"	"	"	"	"	"	U
chloroethane	ND	9	"	"	"	"	"	"	U
trichlorofluoromethane	ND	9	"	"	"	"	"	"	U
1,1-dichloroethene	ND	2	"	"	"	"	"	"	U
acetone	ND	9	"	"	"	"	"	"	U
carbon disulfide	ND	2	"	"	"	"	"	"	U
methylene chloride	ND	2	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	2	"	"	"	"	"	"	U
trans-1,2-dichloroethene	ND	2	"	"	"	"	"	"	U
1,1-dichloroethane	ND	2	"	"	"	"	"	"	U
vinyl acetate	ND	9	"	"	"	"	"	"	U
2-butanone	ND	9	"	"	"	"	"	"	U
2,2-dichloropropane	ND	2	"	"	"	"	"	"	U
cis-1,2-dichloroethene	ND	2	"	"	"	"	"	"	U
chloroform	ND	2	"	"	"	"	"	"	U
bromochloromethane	ND	2	"	"	"	"	"	"	U
1,1,1-trichloroethane	ND	2	"	"	"	"	"	"	U
carbon tetrachloride	ND	2	"	"	"	"	"	"	U
1,1-dichloropropene	ND	2	"	"	"	"	"	"	U
benzene	ND	2	"	"	"	"	"	"	U
1,2-dichloroethane	ND	2	"	"	"	"	"	"	U
trichloroethene	ND	2	"	"	"	"	"	"	U
1,2-dichloropropane	ND	2	"	"	"	"	"	"	U
bromodichloromethane	ND	2	"	"	"	"	"	"	U
4-Methyl-2-pentanone (MIBK)	ND	9	"	"	"	"	"	"	U
cis-1,3-dichloropropene	ND	2	"	"	"	"	"	"	U
toluene	2	2	"	"	"	"	"	"	
trans-1,3-dichloropropene	ND	2	"	"	"	"	"	"	U
1,1,2-trichloroethane	ND	2	"	"	"	"	"	"	U
2-hexanone	ND	9	"	"	"	"	"	"	U
tetrachloroethene	ND	2	"	"	"	"	"	"	U
1,3-dichloropropane	ND	2	"	"	"	"	"	"	U
dibromochloromethane	ND	2	"	"	"	"	"	"	U
1,2-dibromoethane	ND	2	"	"	"	"	"	"	U
1-chlorohexane	ND	2	"	"	"	"	"	"	U
chlorobenzene	ND	2	"	"	"	"	"	"	U
1,1,1,2-tetrachloroethane	ND	2	"	"	"	"	"	"	U
ethylbenzene	ND	2	"	"	"	"	"	"	U
m,p-xylene	ND	3	"	"	"	"	"	"	U

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Buffalo Crushed Stone P.O. Box 710 Buffalo NY, 14227	Project: CertainTeed Project Number: Wellsville Refinery Project Manager: Gary Nelson	Reported: 07/31/07 16:44

Volatile Organic Compounds by EPA Method 8260B

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
De-con Pad (7G24009-01) Solid Sampled: 07/24/07 11:00 Received: 07/24/07 15:00									
o-xylene	ND	2	ug/kg dry	1	AG72501	07/25/07	07/25/07	8260	U
styrene	ND	2	"	"	"	"	"	"	U
bromoform	ND	2	"	"	"	"	"	"	U
isopropylbenzene	ND	2	"	"	"	"	"	"	U
1,1,2,2-tetrachloroethane	ND	2	"	"	"	"	"	"	U
bromobenzene	ND	2	"	"	"	"	"	"	U
1,2,3-trichloropropane	ND	2	"	"	"	"	"	"	U
n-propylbenzene	ND	2	"	"	"	"	"	"	U
2-chlorotoluene	ND	2	"	"	"	"	"	"	U
1,3,5-trimethylbenzene	ND	2	"	"	"	"	"	"	U
4-chlorotoluene	ND	2	"	"	"	"	"	"	U
tert-butylbenzene	ND	2	"	"	"	"	"	"	U
1,2,4-trimethylbenzene	ND	2	"	"	"	"	"	"	U
sec-butylbenzene	ND	2	"	"	"	"	"	"	U
p-isopropyltoluene	ND	2	"	"	"	"	"	"	U
1,3-dichlorobenzene	ND	2	"	"	"	"	"	"	U
1,4-dichlorobenzene	ND	2	"	"	"	"	"	"	U
n-butylbenzene	ND	2	"	"	"	"	"	"	U
1,2-dichlorobenzene	ND	2	"	"	"	"	"	"	U
1,2-dibromo-3-chloropropane	ND	9	"	"	"	"	"	"	U
1,2,4-trichlorobenzene	ND	2	"	"	"	"	"	"	U
hexachlorobutadiene	ND	2	"	"	"	"	"	"	U
naphthalene	ND	2	"	"	"	"	"	"	U
1,2,3-trichlorobenzene	ND	2	"	"	"	"	"	"	U
Surrogate: Dibromofluoromethane		*101 %*	*70-130*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.3 %*	*69-132*		"	"	"	"	
Surrogate: Toluene-d8		*92.0 %*	*81-121*		"	"	"	"	
Surrogate: Bromofluorobenzene		*92.0 %*	*89-121*		"	"	"	"	

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Volatile Organic Compounds by EPA Method 8260B

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pipe Embedment (7G24009-02) Solid	**Sampled: 07/24/07 12:00**		**Received: 07/24/07 15:00**						
dichlorodifluoromethane	ND	10	ug/kg dry	1	AG72301	07/25/07	07/25/07	8260	U
chloromethane	ND	10	"	"	"	"	"	"	U
vinyl chloride	ND	10	"	"	"	"	"	"	U
bromomethane	ND	10	"	"	"	"	"	"	U
chloroethane	ND	10	"	"	"	"	"	"	U
trichlorofluoromethane	ND	10	"	"	"	"	"	"	U
1,1-dichloroethene	ND	2	"	"	"	"	"	"	U
acetone	ND	10	"	"	"	"	"	"	U
carbon disulfide	ND	2	"	"	"	"	"	"	U
methylene chloride	ND	2	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	2	"	"	"	"	"	"	U
trans-1,2-dichloroethene	ND	2	"	"	"	"	"	"	U
1,1-dichloroethane	ND	2	"	"	"	"	"	"	U
vinyl acetate	ND	10	"	"	"	"	"	"	U
2-butanone	ND	10	"	"	"	"	"	"	U
2,2-dichloropropane	ND	2	"	"	"	"	"	"	U
cis-1,2-dichloroethene	ND	2	"	"	"	"	"	"	U
chloroform	ND	2	"	"	"	"	"	"	U
bromochloromethane	ND	2	"	"	"	"	"	"	U
1,1,1-trichloroethane	ND	2	"	"	"	"	"	"	U
carbon tetrachloride	ND	2	"	"	"	"	"	"	U
1,1-dichloropropene	ND	2	"	"	"	"	"	"	U
benzene	2	2	"	"	"	"	"	"	
1,2-dichloroethane	ND	2	"	"	"	"	"	"	U
trichloroethene	ND	2	"	"	"	"	"	"	U
1,2-dichloropropane	ND	2	"	"	"	"	"	"	U
bromodichloromethane	ND	2	"	"	"	"	"	"	U
4-Methyl-2-pentanone (MIBK)	ND	10	"	"	"	"	"	"	U
cis-1,3-dichloropropene	ND	2	"	"	"	"	"	"	U
toluene	5	2	"	"	"	"	"	"	
trans-1,3-dichloropropene	ND	2	"	"	"	"	"	"	U
1,1,2-trichloroethane	ND	2	"	"	"	"	"	"	U
2-hexanone	ND	10	"	"	"	"	"	"	U
tetrachloroethene	ND	2	"	"	"	"	"	"	U
1,3-dichloropropane	ND	2	"	"	"	"	"	"	U
dibromochloromethane	ND	2	"	"	"	"	"	"	U
1,2-dibromoethane	ND	2	"	"	"	"	"	"	U
1-chlorohexane	ND	2	"	"	"	"	"	"	U
chlorobenzene	ND	2	"	"	"	"	"	"	U
1,1,1,2-tetrachloroethane	ND	2	"	"	"	"	"	"	U
ethylbenzene	ND	2	"	"	"	"	"	"	U
m,p-xylene	ND	4	"	"	"	"	"	"	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Buffalo Crushed Stone	Project: CertainTeed	
P.O. Box 710	Project Number: Wellsville Refinery	**Reported:**
Buffalo NY, 14227	Project Manager: Gary Nelson	07/31/07 16:44

Volatile Organic Compounds by EPA Method 8260B

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pipe Embedment (7G24009-02) Solid	**Sampled: 07/24/07 12:00**	**Received: 07/24/07 15:00**							
o-xylene	ND	2	ug/kg dry	1	AG72501	07/25/07	07/25/07	8260	U
styrene	ND	2	"	"	"	"	"	"	U
bromoform	ND	2	"	"	"	"	"	"	U
isopropylbenzene	ND	2	"	"	"	"	"	"	U
1,1,2,2-tetrachloroethane	ND	2	"	"	"	"	"	"	U
bromobenzene	ND	2	"	"	"	"	"	"	U
1,2,3-trichloropropane	ND	2	"	"	"	"	"	"	U
n-propylbenzene	ND	2	"	"	"	"	"	"	U
2-chlorotoluene	ND	2	"	"	"	"	"	"	U
1,3,5-trimethylbenzene	ND	2	"	"	"	"	"	"	U
4-chlorotoluene	ND	2	"	"	"	"	"	"	U
tert-butylbenzene	ND	2	"	"	"	"	"	"	U
1,2,4-trimethylbenzene	ND	2	"	"	"	"	"	"	U
sec-butylbenzene	ND	2	"	"	"	"	"	"	U
p-isopropyltoluene	ND	2	"	"	"	"	"	"	U
1,3-dichlorobenzene	ND	2	"	"	"	"	"	"	U
1,4-dichlorobenzene	ND	2	"	"	"	"	"	"	U
n-butylbenzene	ND	2	"	"	"	"	"	"	U
1,2-dichlorobenzene	ND	2	"	"	"	"	"	"	U
1,2-dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	U
1,2,4-trichlorobenzene	ND	2	"	"	"	"	"	"	U
hexachlorobutadiene	ND	2	"	"	"	"	"	"	U
naphthalene	ND	2	"	"	"	"	"	"	U
1,2,3-trichlorobenzene	ND	2	"	"	"	"	"	"	U
Surrogate: Dibromofluoromethane		*92.0 %*	*70-130*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.7 %*	*69-132*		"	"	"	"	
Surrogate: Toluene-d8		*92.3 %*	*81-121*		"	"	"	"	
Surrogate: Bromofluorobenzene		*90.7 %*	*83-121*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Buffalo Crushed Stone	Project: CertainTeed	
P.O. Box 710	Project Number: Wellsville Refinery	Reported:
Buffalo NY, 14227	Project Manager: Gary Nelson	07/31/07 16:44

Volatile Organic Compounds by EPA Method 8260B

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aggregate Backfill (7G24009-03) Solid	**Sampled: 07/24/07 12:00**		**Received: 07/24/07 15:00**						
dichlorodifluoromethane	ND	10	ug/kg dry	1	AG72501	07/25/07	07/25/07	8260	U
chloromethane	ND	10	"	"	"	"	"	"	U
vinyl chloride	ND	10	"	"	"	"	"	"	U
bromomethane	ND	10	"	"	"	"	"	"	U
chloroethane	ND	10	"	"	"	"	"	"	U
trichlorofluoromethane	ND	10	"	"	"	"	"	"	U
1,1-dichloroethene	ND	2	"	"	"	"	"	"	U
acetone	ND	10	"	"	"	"	"	"	U
carbon disulfide	ND	2	"	"	"	"	"	"	U
methylene chloride	ND	2	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	2	"	"	"	"	"	"	U
trans-1,2-dichloroethene	ND	2	"	"	"	"	"	"	U
1,1-dichloroethane	ND	2	"	"	"	"	"	"	U
vinyl acetate	ND	10	"	"	"	"	"	"	U
2-butanone	ND	10	"	"	"	"	"	"	U
2,2-dichloropropane	ND	2	"	"	"	"	"	"	U
cis-1,2-dichloroethene	ND	2	"	"	"	"	"	"	U
chloroform	ND	2	"	"	"	"	"	"	U
bromochloromethane	ND	2	"	"	"	"	"	"	U
1,1,1-trichloroethane	ND	2	"	"	"	"	"	"	U
carbon tetrachloride	ND	2	"	"	"	"	"	"	U
1,1-dichloropropene	ND	2	"	"	"	"	"	"	U
benzene	ND	2	"	"	"	"	"	"	U
1,2-dichloroethane	ND	2	"	"	"	"	"	"	U
trichloroethene	ND	2	"	"	"	"	"	"	U
1,2-dichloropropane	ND	2	"	"	"	"	"	"	U
bromodichloromethane	ND	2	"	"	"	"	"	"	U
4-Methyl-2-pentanone (MIBK)	ND	10	"	"	"	"	"	"	U
cis-1,3-dichloropropene	ND	2	"	"	"	"	"	"	U
toluene	ND	2	"	"	"	"	"	"	U
trans-1,3-dichloropropene	ND	2	"	"	"	"	"	"	U
1,1,2-trichloroethane	ND	2	"	"	"	"	"	"	U
2-hexanone	ND	10	"	"	"	"	"	"	U
tetrachloroethene	ND	2	"	"	"	"	"	"	U
1,3-dichloropropane	ND	2	"	"	"	"	"	"	U
dibromochloromethane	ND	2	"	"	"	"	"	"	U
1,2-dibromoethane	ND	2	"	"	"	"	"	"	U
1-chlorohexane	ND	2	"	"	"	"	"	"	U
chlorobenzene	ND	2	"	"	"	"	"	"	U
1,1,1,2-tetrachloroethane	ND	2	"	"	"	"	"	"	U
ethylbenzene	ND	2	"	"	"	"	"	"	U
m,p-xylene	ND	4	"	"	"	"	"	"	U

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Buffalo Crushed Stone	Project: CertainTeed	
P.O. Box 710	Project Number: Wellsville Refinery	Reported:
Buffalo NY, 14227	Project Manager: Gary Nelson	07/31/07 16:44

Volatile Organic Compounds by EPA Method 8260B

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aggregate Backfill (7G24009-03) Solid	**Sampled: 07/24/07 12:00**		**Received: 07/24/07 15:00**						
o-xylene	ND	2	ug/kg dry	1	AG72501	07/25/07	07/25/07	8260	U
styrene	ND	2	"	"	"	"	"	"	U
bromoform	ND	2	"	"	"	"	"	"	U
isopropylbenzene	ND	2	"	"	"	"	"	"	U
1,1,2,2-tetrachloroethane	ND	2	"	"	"	"	"	"	U
bromobenzene	ND	2	"	"	"	"	"	"	U
1,2,3-trichloropropane	ND	2	"	"	"	"	"	"	U
n-propylbenzene	ND	2	"	"	"	"	"	"	U
2-chlorotoluene	ND	2	"	"	"	"	"	"	U
1,3,5-trimethylbenzene	ND	2	"	"	"	"	"	"	U
4-chlorotoluene	ND	2	"	"	"	"	"	"	U
tert-butylbenzene	ND	2	"	"	"	"	"	"	U
1,2,4-trimethylbenzene	ND	2	"	"	"	"	"	"	U
sec-butylbenzene	ND	2	"	"	"	"	"	"	U
p-isopropyltoluene	ND	2	"	"	"	"	"	"	U
1,3-dichlorobenzene	ND	2	"	"	"	"	"	"	U
1,4-dichlorobenzene	ND	2	"	"	"	"	"	"	U
n-butylbenzene	ND	2	"	"	"	"	"	"	U
1,2-dichlorobenzene	ND	2	"	"	"	"	"	"	U
,2-dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	U
1,2,4-trichlorobenzene	ND	2	"	"	"	"	"	"	U
hexachlorobutadiene	ND	2	"	"	"	"	"	"	U
naphthalene	ND	2	"	"	"	"	"	"	U
1,2,3-trichlorobenzene	ND	2	"	"	"	"	"	"	U
Surrogate: Dibromofluoromethane		*93.0 %*	*70-130*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*88.7 %*	*69-132*		"	"	"	"	
Surrogate: Toluene-d8		*91.3 %*	*81-121*		"	"	"	"	
Surrogate: Bromofluorobenzene		*91.3 %*	*83-121*		"	"	"	"	

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Buffalo Crushed Stone	Project: CertainTeed	
P.O. Box 710	Project Number: Wellsville Refinery	**Reported:**
Buffalo NY, 14227	Project Manager: Gary Nelson	07/31/07 16:44

Conventional Chemistry Parameters by EPA Methods

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
De-con Pad (7G24009-01) Solid Sampled: 07/24/07 11:00 Received: 07/24/07 15:00									
% Solids	99.5	0.1	%	1	AG73006	07/30/07	07/30/07	% calculation	
Pipe Embedment (7G24009-02) Solid Sampled: 07/24/07 12:00 Received: 07/24/07 15:00									
% Solids	99.4	0.1	%	1	AG73006	07/30/07	07/30/07	% calculation	
Aggregate Backfill (7G24009-03) Solid Sampled: 07/24/07 12:00 Received: 07/24/07 15:00									
% Solids	99.9	0.1	%	1	AG73006	07/30/07	07/30/07	% calculation	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Notes and Definitions

U	Analyte included in the analysis, but not detected
B	Analyte is found in the associated blank as well as in the sample (CLP B-flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

CHAIN OF CUSTODY

WASTE STREAM TECHNOLOGY

Waste Stream Technology Inc.
302 Grote Street, Buffalo, NY 14207
(716) 876-5290 · FAX (716) 876-2412

OFFICE USE ONLY
GROUP # 7G24009
DUE DATE

PAGE 1 OF 1

REPORT TO: Gary Nelson
Buffalo Crushed Stone

CONTACT

PH.# (716) 912-3729
FAX# (716) 683-8040

BILL TO: Buffalo Crushed Stone
P.O. Box 710, Buffalo NY 14209

PO# Wellsville Refinery

PROJECT DESCRIPTION

SAMPLER SIGNATURE

DW DRINKING WATER · GW GROUND WATER · SW SURFACE WATER · WW WASTE WATER · O OIL
SL SLUDGE · SO SOIL · S SOLID · W WIPE · OTHER

TURN AROUND TIME: SRD
QUOTATION NUMBER:

ARE SPECIAL DETECTION LIMITS REQUIRED: YES NO
If yes please attach requirements

Is a QC Package required: YES NO
If yes please attach requirements.

ANALYSES TO BE PERFORMED
As Submitted To Joe Gor. 7/23/07

	SAMPLE I.D.	DATE SAMPLED	TIME OF SAMPLING	SAMPLE TYPE	TOTAL NO. OF CONTAINERS	8270 C	8260 Full list	PST Pkg	Dioxins - Sig Contacts	As Cd Cr Cu Pb Mo Ni Hg Zn	BUIS Drg					TYPE OF CONTAINER/ COMMENTS:	OFFICE USE ONLY WST. I.D.
1	de-con Pad	7/24/07	11:00	Grab	1	X	X	X	X	X	X						01
2	Pipe Embedment	7/24/07	12:00	"	1												02
3	Aggregate Backfill	7/24/07	12:00	"	1								-				03
4																	
5																	
6																	
7																	
8																	
9																	
10																	

REMARKS: Analytes as per fax received from client (J6)

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
	7/24/07			7/24/07	1:15
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
	7/24/07	1:15		7/24/07	15:30

Buffalo Crushed Stone P.O. Box 710 Buffalo NY, 14227	Project: CertainTeed Project Number: Wellsville Refinery Project Manager: Gary Nelson	Reported: 08/01/07 16:18

Semivolatile Organic Compounds by EPA Method 8270C

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
De-con Pad (7G24009-01) Solid Sampled: 07/24/07 11:00 Received: 07/24/07 15:00									
N-Nitrosodimethylamine	ND	67	ug/kg dry	1	AG73114	07/31/07	07/31/07	8270	U
bis(2-chloroethyl)ether	ND	67	"	"	"	"	"	"	U
phenol	ND	130	"	"	"	"	"	"	U
2-chlorophenol	ND	130	"	"	"	"	"	"	U
1,3-dichlorobenzene	ND	67	"	"	"	"	"	"	U
1,4-dichlorobenzene	ND	67	"	"	"	"	"	"	U
1,2-dichlorobenzene	ND	67	"	"	"	"	"	"	U
benzyl alcohol	ND	67	"	"	"	"	"	"	U
bis(2-chloroisopropyl)ether	ND	67	"	"	"	"	"	"	U
2-methylphenol	ND	67	"	"	"	"	"	"	U
hexachloroethane	ND	67	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	67	"	"	"	"	"	"	U
3 & 4-methylphenol	ND	130	"	"	"	"	"	"	U
nitrobenzene	ND	67	"	"	"	"	"	"	U
isophorone	ND	67	"	"	"	"	"	"	U
2-nitrophenol	ND	130	"	"	"	"	"	"	U
2,4-dimethylphenol	ND	130	"	"	"	"	"	"	U
Bis(2-chloroethoxy)methane	ND	67	"	"	"	"	"	"	U
benzoic acid	ND	330	"	"	"	"	"	"	U
2,4-dichlorophenol	ND	130	"	"	"	"	"	"	U
1,2,4-trichlorobenzene	ND	67	"	"	"	"	"	"	U
naphthalene	ND	67	"	"	"	"	"	"	U
4-chloroaniline	ND	67	"	"	"	"	"	"	U
hexachlorobutadiene	ND	67	"	"	"	"	"	"	U
4-chloro-3-methylphenol	ND	130	"	"	"	"	"	"	U
2-methylnaphthalene	ND	67	"	"	"	"	"	"	U
hexachlorocyclopentadiene	ND	130	"	"	"	"	"	"	U
2,4,6-trichlorophenol	ND	130	"	"	"	"	"	"	U
2,4,5-trichlorophenol	ND	67	"	"	"	"	"	"	U
2-chloronaphthalene	ND	67	"	"	"	"	"	"	U
2-nitroaniline	ND	67	"	"	"	"	"	"	U
acenaphthylene	ND	67	"	"	"	"	"	"	U
Dimethyl phthalate	ND	67	"	"	"	"	"	"	U
2,6-dinitrotoluene	ND	67	"	"	"	"	"	"	U
acenaphthene	ND	67	"	"	"	"	"	"	U
3-nitroaniline	ND	67	"	"	"	"	"	"	U
2,4-dinitrophenol	ND	130	"	"	"	"	"	"	U
dibenzofuran	ND	67	"	"	"	"	"	"	U
2,4-dinitrotoluene	ND	67	"	"	"	"	"	"	U
4-nitrophenol	ND	130	"	"	"	"	"	"	U
fluorene	ND	67	"	"	"	"	"	"	U
4-Chlorophenyl phenyl ether	ND	67	"	"	"	"	"	"	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Buffalo Crushed Stone P.O. Box 710 Buffalo NY, 14227	Project: CertainTeed Project Number: Wellsville Refinery Project Manager: Gary Nelson	Reported: 08/01/07 16:18

Semivolatile Organic Compounds by EPA Method 8270C

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
De-con Pad (7G24089-01) Solid Sampled: 07/24/07 11:00 Received: 07/24/07 15:00									
Diethyl phthalate	ND	67	ug/kg dry	1	AG73114	07/31/07	07/31/07	8270	U
4-nitroaniline	ND	67	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	130	"	"	"	"	"	"	U
n-nitrosodiphenylamine	ND	67	"	"	"	"	"	"	U
4-bromophenylphenylether	ND	67	"	"	"	"	"	"	U
hexachlorobenzene	ND	67	"	"	"	"	"	"	U
pentachlorophenol	ND	130	"	"	"	"	"	"	U
phenanthrene	ND	67	"	"	"	"	"	"	U
anthracene	ND	67	"	"	"	"	"	"	U
carbazole	ND	67	"	"	"	"	"	"	U
Di-n-butyl phthalate	ND	67	"	"	"	"	"	"	U
benzidine	ND	330	"	"	"	"	"	"	U
fluoranthene	ND	67	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	67	"	"	"	"	"	"	U
pyrene	ND	67	"	"	"	"	"	"	U
Butyl benzyl phthalate	ND	67	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	67	"	"	"	"	"	"	U
chrysene	ND	67	"	"	"	"	"	"	U
bis(2-ethylhexyl)phthalate	ND	67	"	"	"	"	"	"	U
Di-n-octyl phthalate	ND	67	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	67	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	67	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	67	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	67	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	67	"	"	"	"	"	"	U
Benzo (g,h,i) perylene	ND	67	"	"	"	"	"	"	U
Surrogate: 2-Fluorophenol		*51.5 %*	*40-105*	"	"	"	"	"	
Surrogate: Phenol-d6		*53.7 %*	*43-108*	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		*60.8 %*	*50-98*	"	"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*78.1 %*	*49-98*	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*63.3 %*	*52-112*	"	"	"	"	"	
Surrogate: Terphenyl-d14		*163 %*	*43-108*	"	"	"	"	"	G

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Buffalo Crushed Stone	Project: CertainTeed	
P.O. Box 710	Project Number: Wellsville Refinery	Reported:
Buffalo NY, 14227	Project Manager: Gary Nelson	08/01/07 16:18

Semivolatile Organic Compounds by EPA Method 8270C

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pipe Embedment (7G24009-02) Solid Sampled: 07/24/07 12:00 Received: 07/24/07 15:09									
N-Nitrosodimethylamine	ND	67	ug/kg dry	1	AG73114	07/31/07	08/01/07	8270	U
bis(2-chloroethyl)ether	ND	67	"	"	"	"	"	"	U
phenol	ND	130	"	"	"	"	"	"	U
2-chlorophenol	ND	130	"	"	"	"	"	"	U
1,3-dichlorobenzene	ND	67	"	"	"	"	"	"	U
1,4-dichlorobenzene	ND	67	"	"	"	"	"	"	U
1,2-dichlorobenzene	ND	67	"	"	"	"	"	"	U
benzyl alcohol	ND	67	"	"	"	"	"	"	U
bis(2-chloroisopropyl)ether	ND	67	"	"	"	"	"	"	U
2-methylphenol	ND	67	"	"	"	"	"	"	U
hexachloroethane	ND	67	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	67	"	"	"	"	"	"	U
3 & 4-methylphenol	ND	130	"	"	"	"	"	"	U
nitrobenzene	ND	67	"	"	"	"	"	"	U
isophorone	ND	67	"	"	"	"	"	"	U
2-nitrophenol	ND	130	"	"	"	"	"	"	U
2,4-dimethylphenol	ND	130	"	"	"	"	"	"	U
Bis(2-chloroethoxy)methane	ND	67	"	"	"	"	"	"	U
benzoic acid	ND	330	"	"	"	"	"	"	U
2,4-dichlorophenol	ND	130	"	"	"	"	"	"	U
1,2,4-trichlorobenzene	ND	67	"	"	"	"	"	"	U
naphthalene	ND	67	"	"	"	"	"	"	U
4-chloroaniline	ND	67	"	"	"	"	"	"	U
hexachlorobutadiene	ND	67	"	"	"	"	"	"	U
4-chloro-3-methylphenol	ND	130	"	"	"	"	"	"	U
2-methylnaphthalene	ND	67	"	"	"	"	"	"	U
hexachlorocyclopentadiene	ND	130	"	"	"	"	"	"	U
2,4,6-trichlorophenol	ND	130	"	"	"	"	"	"	U
2,4,5-trichlorophenol	ND	67	"	"	"	"	"	"	U
2-chloronaphthalene	ND	67	"	"	"	"	"	"	U
2-nitroaniline	ND	67	"	"	"	"	"	"	U
acenaphthylene	ND	67	"	"	"	"	"	"	U
Dimethyl phthalate	ND	67	"	"	"	"	"	"	U
2,6-dinitrotoluene	ND	67	"	"	"	"	"	"	U
acenaphthene	ND	67	"	"	"	"	"	"	U
3-nitroaniline	ND	67	"	"	"	"	"	"	U
2,4-dinitrophenol	ND	130	"	"	"	"	"	"	U
dibenzofuran	ND	67	"	"	"	"	"	"	U
2,4-dinitrotoluene	ND	67	"	"	"	"	"	"	U
4-nitrophenol	ND	130	"	"	"	"	"	"	U
fluorene	ND	67	"	"	"	"	"	"	U
4-Chlorophenyl phenyl ether	ND	67	"	"	"	"	"	"	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Buffalo Crushed Stone P.O. Box 710 Buffalo NY, 14227	Project: CertainTeed Project Number: Wellsville Refinery Project Manager: Gary Nelson	Reported: 08/07/07 16:18

Semivolatile Organic Compounds by EPA Method 8270C

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pipe Embedment (7G24009-02) Solid Sampled: 07/24/07 12:00 Received: 07/24/07 15:00									
Diethyl phthalate	ND	67	ug/kg dry	1	AG73114	07/31/07	08/01/07	8270	U
4-nitroaniline	ND	67	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	130	"	"	"	"	"	"	U
n-nitrosodiphenylamine	ND	67	"	"	"	"	"	"	U
4-bromophenylphenylether	ND	67	"	"	"	"	"	"	U
hexachlorobenzene	ND	67	"	"	"	"	"	"	U
pentachlorophenol	ND	130	"	"	"	"	"	"	U
phenanthrene	ND	67	"	"	"	"	"	"	U
anthracene	ND	67	"	"	"	"	"	"	U
carbazole	ND	67	"	"	"	"	"	"	U
Di-n-butyl phthalate	ND	67	"	"	"	"	"	"	U
benzidine	ND	330	"	"	"	"	"	"	U
fluoranthene	ND	67	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	67	"	"	"	"	"	"	U
pyrene	ND	67	"	"	"	"	"	"	U
Butyl benzyl phthalate	ND	67	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	67	"	"	"	"	"	"	U
chrysene	ND	67	"	"	"	"	"	"	U
bis(2-ethylhexyl)phthalate	ND	67	"	"	"	"	"	"	U
Di-n-octyl phthalate	ND	67	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	67	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	67	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	67	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	67	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	67	"	"	"	"	"	"	U
Benzo (g,h,i) perylene	ND	67	"	"	"	"	"	"	U
Surrogate: 2-Fluorophenol		*64.1 %*	*40-103*		"	"	"	"	
Surrogate: Phenol-d6		*60.3 %*	*43-108*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*69.2 %*	*50-98*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*80.8 %*	*49-98*		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*53.3 %*	*52-112*		"	"	"	"	
Surrogate: Terphenyl-d14		*160 %*	*43-108*		"	"	"	"	*G*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Buffalo Crushed Stone	Project: CertainTeed	
P.O. Box 710	Project Number: Wellsville Refinery	Reported:
Buffalo NY, 14227	Project Manager: Gary Nelson	08/01/07 16:18

Semivolatile Organic Compounds by EPA Method 8270C

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aggregate Backfill (7G24009-03) Solid Sampled: 07/24/07 12:00 Received: 07/24/07 15:00									
N-Nitrosodimethylamine	ND	67	ug/kg dry	1	AG73114	07/31/07	08/01/07	8270	U
bis(2-chloroethyl)ether	ND	67	"	"	"	"	"	"	U
phenol	ND	130	"	"	"	"	"	"	U
2-chlorophenol	ND	130	"	"	"	"	"	"	U
1,3-dichlorobenzene	ND	67	"	"	"	"	"	"	U
1,4-dichlorobenzene	ND	67	"	"	"	"	"	"	U
1,2-dichlorobenzene	ND	67	"	"	"	"	"	"	U
benzyl alcohol	ND	67	"	"	"	"	"	"	U
bis(2-chloroisopropyl)ether	ND	67	"	"	"	"	"	"	U
2-methylphenol	ND	67	"	"	"	"	"	"	U
hexachloroethane	ND	67	"	"	"	"	"	"	U
N-Nitrosodi-n-propylamine	ND	67	"	"	"	"	"	"	U
3 & 4-methylphenol	ND	130	"	"	"	"	"	"	U
nitrobenzene	ND	67	"	"	"	"	"	"	U
isophorone	ND	67	"	"	"	"	"	"	U
2-nitrophenol	ND	130	"	"	"	"	"	"	U
2,4-dimethylphenol	ND	130	"	"	"	"	"	"	U
Bis(2-chloroethoxy)methane	ND	67	"	"	"	"	"	"	U
benzoic acid	ND	330	"	"	"	"	"	"	U
2,4-dichlorophenol	ND	130	"	"	"	"	"	"	U
1,2,4-trichlorobenzene	ND	67	"	"	"	"	"	"	U
naphthalene	ND	67	"	"	"	"	"	"	U
4-chloroaniline	ND	67	"	"	"	"	"	"	U
hexachlorobutadiene	ND	67	"	"	"	"	"	"	U
4-chloro-3-methylphenol	ND	130	"	"	"	"	"	"	U
2-methylnaphthalene	ND	67	"	"	"	"	"	"	U
hexachlorocyclopentadiene	ND	130	"	"	"	"	"	"	U
2,4,6-trichlorophenol	ND	130	"	"	"	"	"	"	U
2,4,5-trichlorophenol	ND	67	"	"	"	"	"	"	U
2-chloronaphthalene	ND	67	"	"	"	"	"	"	U
2-nitroaniline	ND	67	"	"	"	"	"	"	U
acenaphthylene	ND	67	"	"	"	"	"	"	U
Dimethyl phthalate	ND	67	"	"	"	"	"	"	U
2,6-dinitrotoluene	ND	67	"	"	"	"	"	"	U
acenaphthene	ND	67	"	"	"	"	"	"	U
3-nitroaniline	ND	67	"	"	"	"	"	"	U
2,4-dinitrophenol	ND	130	"	"	"	"	"	"	U
dibenzofuran	ND	67	"	"	"	"	"	"	U
2,4-dinitrotoluene	ND	67	"	"	"	"	"	"	U
4-nitrophenol	ND	130	"	"	"	"	"	"	U
fluorene	ND	67	"	"	"	"	"	"	U
4-Chlorophenyl phenyl ether	ND	67	"	"	"	"	"	"	U

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Buffalo Crushed Stone P.O. Box 710 Buffalo NY, 14227	Project: CertainTeed Project Number: Wellsville Refinery Project Manager: Gary Nelson	Reported: 08/01/07 16:18

Semivolatile Organic Compounds by EPA Method 8270C

Waste Stream Technology Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aggregate Backfill (7G24009-03) Solid	**Sampled: 07/24/07 12:00**		**Received: 07/24/07 15:00**						
Diethyl phthalate	ND	67	ug/kg dry	1	AG73114	07/31/07	08/01/07	8270	U
4-nitroaniline	ND	67	"	"	"	"	"	"	U
4,6-Dinitro-2-methylphenol	ND	130	"	"	"	"	"	"	U
n-nitrosodiphenylamine	ND	67	"	"	"	"	"	"	U
4-bromophenylphenylether	ND	67	"	"	"	"	"	"	U
hexachlorobenzene	ND	67	"	"	"	"	"	"	U
pentachlorophenol	ND	130	"	"	"	"	"	"	U
phenanthrene	ND	67	"	"	"	"	"	"	U
anthracene	ND	67	"	"	"	"	"	"	U
carbazole	ND	67	"	"	"	"	"	"	U
Di-n-butyl phthalate	ND	67	"	"	"	"	"	"	U
benzidine	ND	330	"	"	"	"	"	"	U
fluoranthene	ND	67	"	"	"	"	"	"	U
3,3'-Dichlorobenzidine	ND	67	"	"	"	"	"	"	U
pyrene	ND	67	"	"	"	"	"	"	U
Butyl benzyl phthalate	ND	67	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	67	"	"	"	"	"	"	U
chrysene	ND	67	"	"	"	"	"	"	U
bis(2-ethylhexyl)phthalate	ND	67	"	"	"	"	"	"	U
Di-n-octyl phthalate	ND	67	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	67	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	67	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	67	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	67	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	67	"	"	"	"	"	"	U
Benzo (g,h,i) perylene	ND	67	"	"	"	"	"	"	U
Surrogate: 2-Fluorophenol		*40.1 %*	*40-103*	"	"	"	"		
Surrogate: Phenol-d6		*43.5 %*	*43-108*	"	"	"	"		
Surrogate: Nitrobenzene-d5		*59.7 %*	*30-98*	"	"	"	"		
Surrogate: 2-Fluorobiphenyl		*68.6 %*	*49-98*	"	"	"	"		
Surrogate: 2,4,6-Tribromophenol		*53.8 %*	*52-112*	"	"	"	"		
Surrogate: Terphenyl-d14		*177 %*	*43-108*	"	"	"	"		G

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 8/8/2007

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

WE ARE SENDING YOU

	Specifications		Plans		Invoice
X	Drawings		Reports	X	Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y ____ N X

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
026	03400A, P1.4/Dwg 20A	Pre-Cast Outlet Structure	8/8/2007					

	For Review & Approval		For Your Use	X

Deviations: None from the referenced Specification noted.

REMARKS/NOTES

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

MANHOLES PRODUCED PER ASTM C-478

- [x] PIPE GASKET (BOOT)
- [ ] O-RINGS
- [x] BUTYL RUBBER
- [ ] JOINT WRAP
- [ ] POUR INVERTS
- [x] NO INVERTS
- [ ] STEPS
- [ ] ADJUSTING RINGS

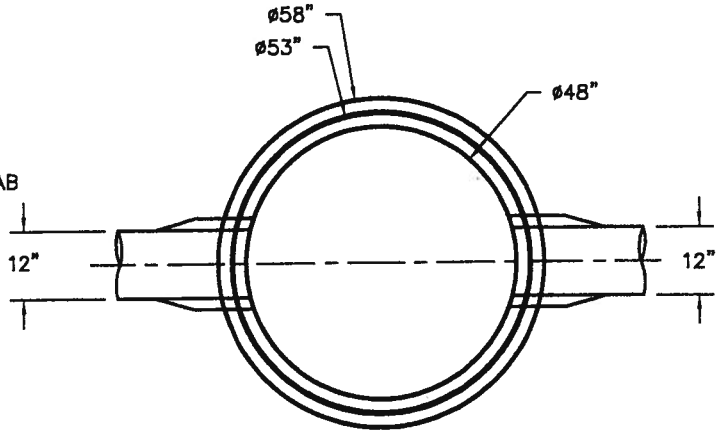
SHIPPING LIST

NO TOP SLAB

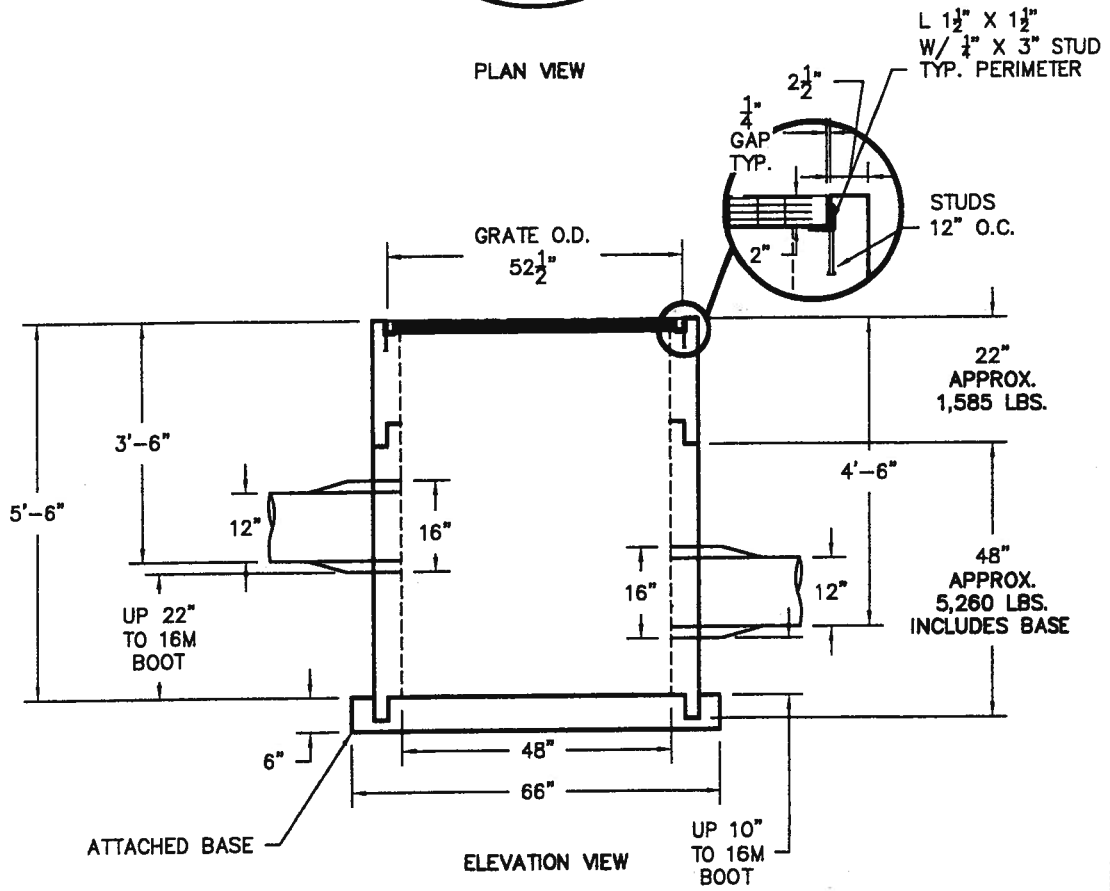
1 – 22" FLAT TOP BARREL

1 – 48" BARREL W/ ATTACHED BASE SLAB

2 – 16M BOOTS



PLAN VIEW



ELEVATION VIEW

NOTES:

ALL GRATING, TO BE SUPPLIED & INSTALLED BY OTHERS

EXTERIOR BITUMINOUS MASTIC COATING

(1 EA.) OUTLET STRUCTURE

SHEET NO. 1 OF 1	COMPASS ENVIRONMENTAL BP REFINERY WELLSVILLE, NY JERRY RESNIK, 419-427-2633	WIESER CONCRETE W3716 US HWY10. MAIDEN ROCK, WI 54750 800-325-8456	SCALE: 3/8" = 1'	REV NO.	DATE:
			DRAWN BY: SWT	NO. 1	8/1/07
			DATE: 7/31/07		
			FILE: custom boxes 2007\Compass Environmental Wellsville, NY BP refinery		

UTILITY ABANDONMENT PLAN

During the course of the execution of field activities underground utilities will be encountered. The existing site drawings identify several utilities in areas that will be excavated. In addition to the site drawings, all utility companies that have utilities in the area were contacted and confirmed the location of their respective underground utilities. Due to the nature and age of the facility where field activities are being performed, it is anticipated that unmarked, abandoned utilities will be encountered.

For utilities where the location is known, extreme care will be exercised during excavation activities. A ground spotter will be utilized. Existing utilities encountered will be shored, braced or otherwise protected to ensure their continued service during and immediately after intrusive activities in their areas. Relocation of existing utility services is not contemplated under the existing scope of work.

Known utilities that are to be abandoned, specifically the water line and electrical runs in the wetlands area, will first be removed to the limits possible. They will then be grouted closed with non-shrink cement or closed as otherwise directed by the Resident Engineer.

If any unmarked utilities are encountered, the Resident Engineer will be immediately contacted to assess the situation. It is anticipated that any unmarked utilities encountered will not be "live". These will be closed in place at the direction of the Resident Engineer.

SPILL RESPONSE

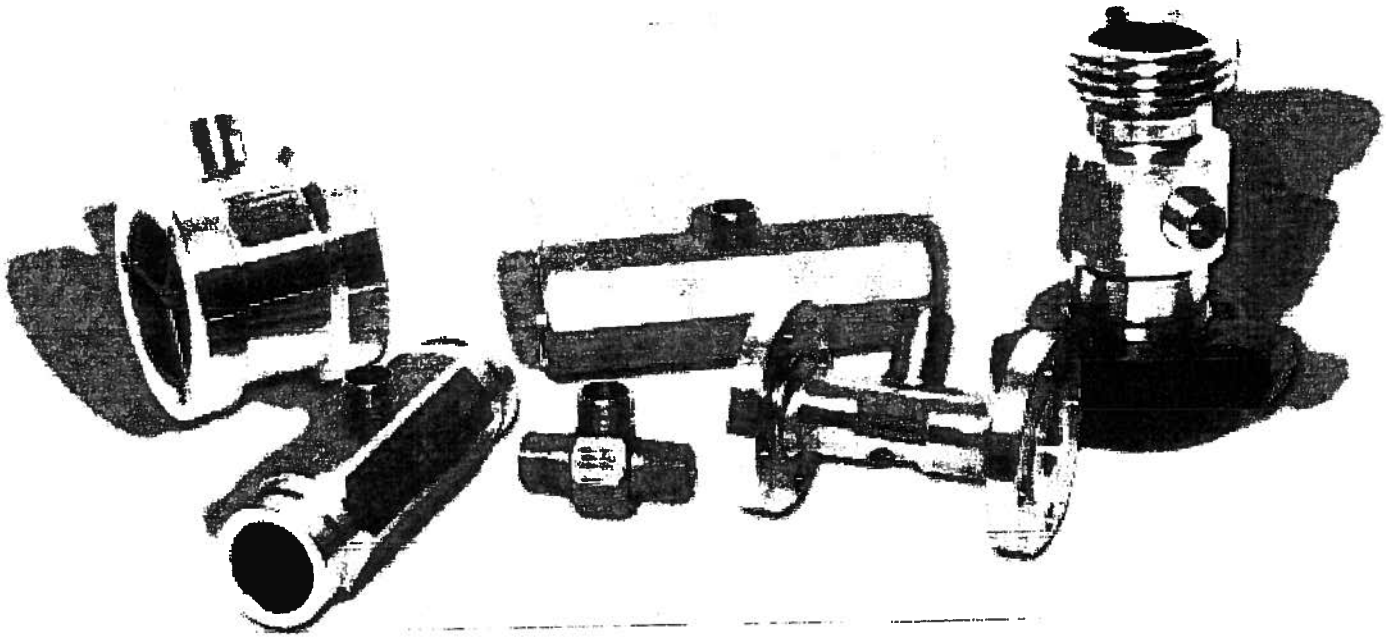
In the event that a "spill" results during the course of excavation activities work in that area will immediately stop. The Resident Engineer will be notified and measures to contain the spill i.e. placement of absorbent boom and/or pads, will be taken. Attempts to contain/stop the source of the spill will take place immediately. Once the situation has been stabilized it will be evaluated to ascertain the best course of action at that time.

A "Spill Response" kit with a capacity of 55 gallons will be kept in the immediate vicinity of the trenching operation. Procedures outlined in the SERP will be followed for spill notification and response. Detailed information is also available in the site HASP.

NuFlo™

Liquid Turbine Flow Meters

Accurate Flow Measurement

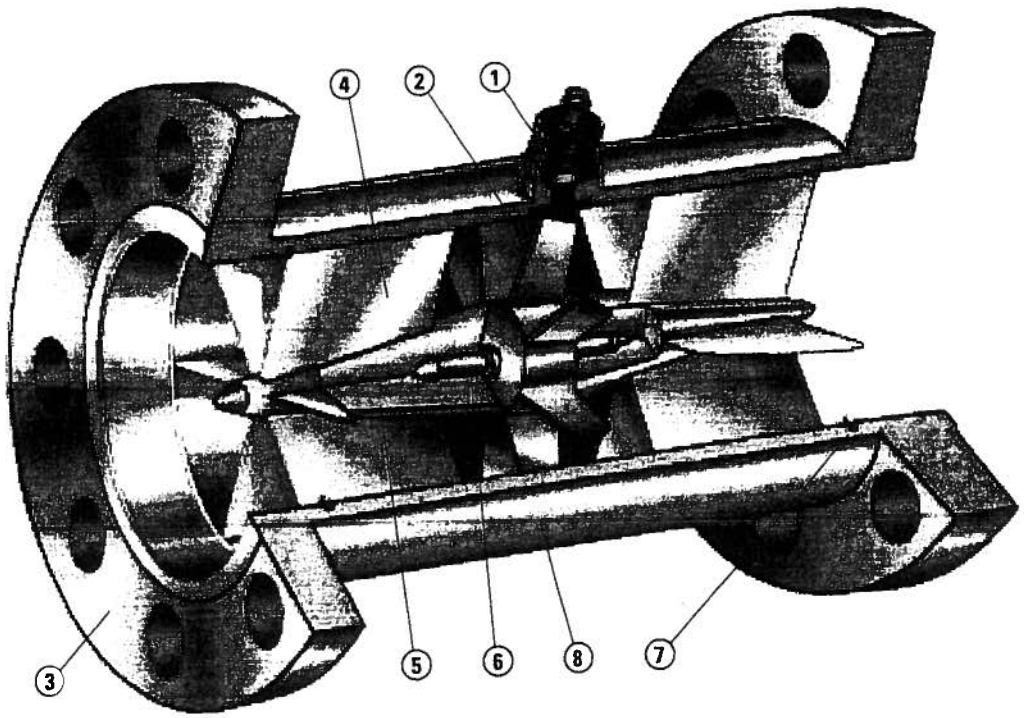


NuFlo developed its first flow meter for oilfield applications in 1957. The meter incorporated a tungsten-carbide shaft and bearing to withstand the rugged conditions of the oilfield environment. Over the years, this flow meter has built an unsurpassed reputation for withstanding severe punishment while maintaining operational and measurement integrity.

NuFlo turbine flow meters indicate flow rate and measure total throughput of a liquid line. As liquid flows through the meter and over the rotor, the rotor turns at a speed that is directly proportional to the flow rate. A magnetic pickup senses the rotor blades as they pass and generates an electrical (sine wave) signal. These electrical pulses are then transmitted to the flow measurement readout equipment.

Liquid Turbine Flow Meters

Inside Story Reveals First Class Design for First Class Performance



1. Permanent conduit connection is standard.
2. ROTOR is pitched and pre-calibrated to determine accuracy.
3. END CONNECTIONS available, flanged or threaded, standard or special.
4. FLOW VANES increase performance at low rates.
5. FLOW VANE HUB supports rotor assembly.
6. ROTOR SHAFT, BEARINGS, AND THRUST BALL are tungsten carbide for long service without lubrication other than by the liquid being measured.
7. RETAINING RINGS make disassembly easy.
8. FLOW METER BODY is sturdy, one-piece construction, precision finished.

Applications

NuFlo offers turbine flow meters for applications in a variety of end connections and accuracy levels. Typical applications are:

- Water-injection measurement
- Heater treaters
- Test and production separators
- Disposal wells
- CO2 injection
- Steam generator fuel and feed water
- Food and beverage industry
- Metering liquid fertilizer
- Water, fuel, and chemical measurement in plant settings
- Chemical tank loading and unloading
- Measuring liquid propane
- Insitu mining and leaching

Specifications

Accuracy*

NuFlo meters are classified as Standard Grade and Industrial Grade, based on the linearity of the meter. The Standard Grade meter provides a cost-effective measurement solution for applications where higher accuracy is not required. For higher accuracy applications, an Industrial Grade meter can be used. Such meters can achieve even greater accuracy if the range of the flow through the meter is specified.

- Standard Grade ± 1% of reading
- Industrial Grade ± 0.5% of reading
- Enhanced Accuracy (Consult Factory)

Note: 3/8" Meters

- Standard Grade ± 2% of reading
- Industrial Grade ± 1% of reading

Repeatability

- Standard Grade ± 0.05%
- Industrial Grade ± 0.02%
  (Based on water calibration)

Temperature Range (magnetic pickup)

- Standard -67 to 250° F (-55 to 121° C)
- Medium -67 to 450° F (-55 to 232° C)
  (Requires medium temperature magnetic pickup)
- High -67 to 850° F (-55 to 454° C)
  (Consult NuFlo Measurement Systems Technology for any use of turbine flow meters above 450°F (232°C).

Mating Output Connection

AN3106A-10SL-4S

Compliances

- CSA Certified Hazardous Locations Class I, Group A,B,C,D, Div. 1
- NACE MR01-75 (NACE traceability available on pressure containing components - on request)
  *Accuracy is the combination of linearity and repeatability.

Materials of Construction

- Meter Body & Vanes Grade 316L stainless steel
- Rotor CD-4MCu
- Shaft & Bearings Tungsten Carbide

Optional Materials

- Shaft Binderless carbide for enhanced corrosion resistance to selected chemicals
- Shaft & Bearings Silver brazing to withstand temperatures to 550°F and chemicals that attack epoxy bonding bearing materials
- Rotor Duplex electroless nickel plating for enhanced corrosion resistance to selected chemicals (especially acids that corrode ferrous materials)

Benefits

- More accurate and repeatable measurement
- An economical solution for turbine flow meter applications
- Easy installation and a variety of end connections
- Minimum maintenance required
- Long service life even in severe applications

Meter Size Selection

Flow meter size selection should be based on the instantaneous flow rate of the line into which the meter will be mounted. Meter size should never be based on the nominal piping size of the installation. Refer to Linear Flow Range Chart for meter size selection. The meter will remain accurate at flow rates higher than its rating, but bearing wear and pressure drop across the meter can shorten the life span of the meter. NuFlo flow meters can be over-ranged by 10% for short periods without damage.

Installation

- The meter should be installed with the arrow on the meter body corresponding to flow direction of the line.
- A 10-diameter length of straight unrestricted pipe must be upstream and a 5-diameter length of straight unrestricted pipe must be downstream of the flow meter. Both pipe sections should be the same nominal pipe size as the flow meter's end connection.
- Throttling/Control valves should be located downstream of the flow meter.

NuFlo Turbine Flow Meter Conduit Thread Data

Temperature Rating	250°F (121°C)	450°F (232°C)
Thread Size	1" NPT	1" NPT

Note: Consult NuFlo Measurement Systems Technology for any use of turbine flow meters above 450°F (232°C).

End Connections

NuFlo flow meters are available in a variety of end connections.

Threaded (NPT) Connections

- Threaded meter sizes range from 3/8-in. to 2-in.
- Meter sizes from 3/8-in. to 1-in. pipe all have 1-in.
- NPT end connections to simplify meter size changes.
- All meter sizes other than the 2-in. have male threads. 1½ is okay ✓

Threaded End Connection Flow Meters Pressure Ratings

Meter Size (in)	3/8	1/2	3/4	7/8	1	1-1/2	2
Working Pressure	7500	7500	7500	5000	5000	5000	5000
PSI/MPa	51.71	51.71	51.71	34.48	34.48	34.48	34.48

Grooved End Connection Flow Meters Pressure Ratings & Length

Flow Meter Size x End Connection Size	Length in.	Length mm	Working Pressure psi	Working Pressure MPa
7/8 x 1	4.0	102	1000	6.9
1 x 1	4.0	102	1000	6.9
1-1/2 x 1-1/2	6.0	152	1000	6.9
1-1/2 x 2	6.0	152	1000	17.2
2 x 2-1/2	10.0	254	1000	17.2
3 x 3	12.5	318	1000	6.9
4 x 4	12.0	305	1000	6.9
6 x 6	12.0	305	800	5.5
8 x 8	12.0	305	800	5.5

Grooved Connections

Flow meters with grooved end connections are available in 7/8-in. through 8-in.

Flanged Connections

Turbine flow meters with flanged end connections are available in both raised-face (RF) models and ring-type joint (RTJ) models. Flanged materials can be carbon steel or stainless steel. All flanged NuFlo meters are equipped with slip-on flanges, which are then welded to the outside of the meter rather than being welded to the end of the meter body. Thus, the flange never comes into contact with the fluid being measured.

EZ-IN™ Connections

Series BF Turbine Flow meters with EZ-IN connections provide a cost-effective alternative to typical flanged-meter applications. Series BF meters with EZ-IN connections offer the accuracy, rugged construction, and maintenance-free operation of conventional NuFlo flow meters plus the following advantages:

- Lower installation cost.
- Less expensive than a conventional, flanged meter.
- Spreader nuts enable easy removal and inspection.
- The raised-face EZ-IN meter will mate to any flange rated ANSI 150# to 1500#. The new ring-joint (RTJ) version will mate to ANSI 900#, 1500# or 2500# RTJ flange. Specify flange type when ordering.

Weco® 1502 Union Connections

Flow meters with 1502 end connections are commonly used in high-pressure oilwell service applications. Meter sizes 1", 11/2" and 2" have 2" union end connections, and 3" meters have 3" union end connections. All 1502 union end meters have two pickup adapters.

Cast Body Flow Meters

Modern casting technologies allow us to now offer cast body standard grade meters. The cast body meters provide cost-effective measurement solutions for applications where higher accuracy is not required. These meters are available in 1" and 11/2" sizes.

Materials of Construction

- Meter Body & Vanes — 3F3M (cast grade 316L stainless steel)
- Rotor — CD4MCu
- Shaft and Bearings — Tungsten Carbide

Specialized Flow Meters

- High-pressure
- Nitrogen
- CO_2
- Cement-Slurry
- Corrosive-Service
- Drilling Fluids

Contact NuFlo Measurement Systems for application assistance.

Linear Flow Range[1,2,3]

Flow Meter Size[3]	mm	GPM	m^3/HR	BPD	Nominal[2] Calibration Factor Pulses Gallon	Pulses x 1000/ m^3	Maximum Output Frequency (Pulses/Sec)	ΔP at Maximum Flow[2] psi	kPa
3/8	10	.3 - 3	0.068 - 0.68	10 - 100	22000	(5812)	1100	4.0	28
1/2	13	.75 - 7.5	0.17 - 1.70	25 - 250	14500	(3830)	1815	12.0	83
3/4	19	2 - 15	0.45 - 3.41	68 - 515	2950	(780)	740	18.0	124
7/8	22	3 - 30	0.68 - 6.81	100 - 1000	2350	(621)	1175	20.0	138
1	25	5 - 50	1.14 - 11.36	170 - 1700	900	(238)	750	20.0	138
1-1/2	38	15 - 180	3.41 - 40.88	515 - 6000	325	(86)	975	16.0	110
2	51	40 - 400	9.09 - 90.85	1300 - 13000	55	(14.5)	365	22.0	152
3	76	80 - 800	18.16 - 181.66	2750 - 27500	57	(15.2)	760	20.0	138
4	102	100 - 1200	22.71 - 272.55	3400 - 41000	30	(7.9)	600	10.0	69
6	152	250 - 2500	56.78 - 567.82	8600 - 86000	7	(1.8)	290	10.0	69
8	203	350 - 3500	79.49 - 794.94	12000 - 120000	3	(.8)	175	6.0	41

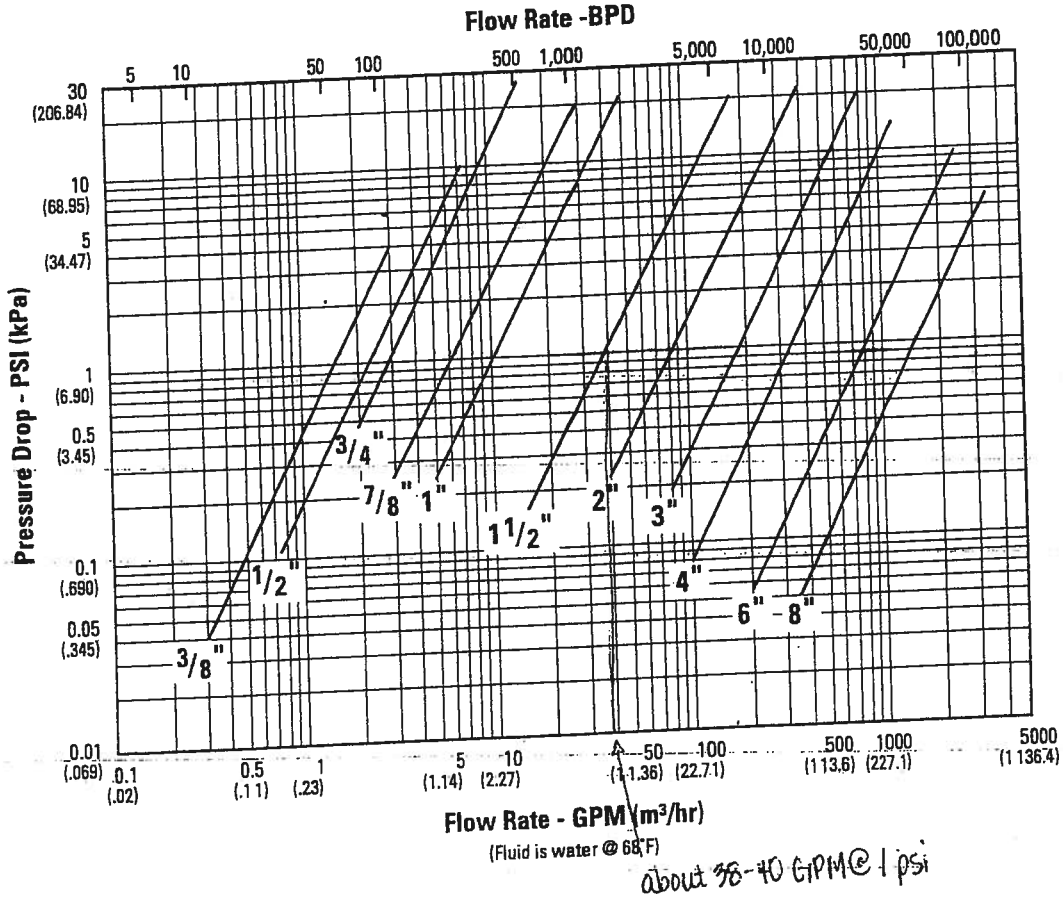
1. The linear flow range of liquids with non-lubricating characteristics is limited to the upper 60% of rating.
2. Based on water.
3. Consult NuFlo Measurement Systems for engineering assistance with applications involving liquids of viscosities greater than 5 centistokes on 3/8-in. through 3/4-in. meters.

Face to Face Dimensions

	Flanged Meters	Threaded	Grooved	EZ-IN 1" Flange	EZ-IN 2" Flange	EZ-IN 2" Ring Joint Flanged 1500 / 2500	Weco High Pressure
3/8*	5.00 (127.0)	4.0 (102)	N/A	4.0 (102)	2.5 (63.5)	N/A	N/A
1/2*	5.00 (127.0)	4.0 (102)	N/A	4.0 (102)	2.5 (63.5)	N/A	N/A
3/4*	5.00 (127.0)	4.0 (102)	N/A	4.0 (102)	2.5 (63.5)	N/A	N/A
7/8	6.00 (152.4)	4.0 (102)	4.0 (102)	4.0 (102)	2.5 (63.5)	3.5 (88.9)	8.00 (203.3)
1	6.00 (152.4)	4.0 (102)	4.0 (102)	4.0 (102)	2.5 (63.5)	3.5 (88.9)	8.60 (218.4)
1-1/2	7.00 (177.8)	6.0 (152)	6.0 (152)	N/A	2.5 (63.5)	3.5 (88.9)	9.00 (228.6)
2	8.50 (215.9)	10.0 (254)	10.0 (254)	N/A	2.5 (63.5)	3.5 (88.9)	9.00 (228.6)
3**	10.00 (254.0)	N/A	12.5 (318)	N/A	4.25 (108)	4.25 (108)	13.0 (330.2)
4	12.00 (304.8)	N/A	12.0 (304.8)	N/A	5.0 (127)	5.0 (127)	N/A
6***	12.00 (304.8)	N/A	12.0 (304.8)	N/A	5.75 (146.1)	5.75 (146.05)	N/A
8***	12.00 (304.8)	N/A	12.0 (304.8)	N/A	6.25 (158.8)	6.25 (158.75)	N/A

* 3/8" through 3/4" 900#, 1500#, 2500# is 6.25 (158.8)
** 3" 2500# is 12.0 (304.8)
*** 6" and 8" 2500# is 14.0 (355.6)

Pressure Drop Curve for NuFlo Turbine Flow Meters



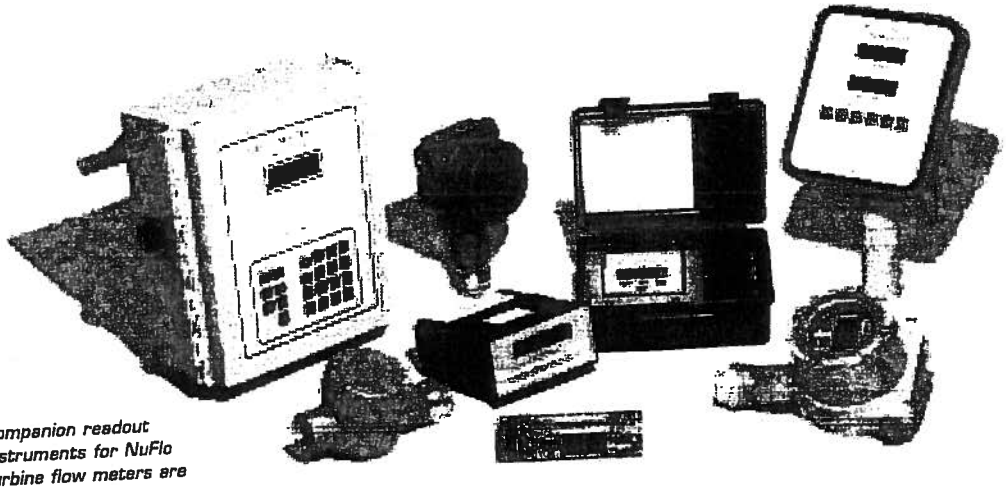
about 38-40 GPM @ 1 psi

Liquid Turbine Flow Meters

Flanged End Connection Flow Meters - ANSI B16.5 Pressure Ratings

ANSI B16.5 Flange Rating			150*		300*		600*		900*		1500*		2500*	
ANSI B16.5 Flange Rating			1.1	2.2	1.1	2.2	1.1	2.2	1.1	2.2	1.1	2.2	1.1	2.2
Design-Operating Temperature Range														
-20 to 100° F (28.8 to 37.7° C)	Max Working Pressure	psi	285	275	740	720	1480	1440	2220	2160	3705	3600	6170	6000
		mPa	1.96	1.89	5.10	4.96	10.2	9.92	15.3	14.9	25.5	24.8	42.5	41.3
-20 to 200° F (28.8 to 93.3° C)	Max Working Pressure	psi	260	240	675	620	1350	1240	2025	1860	3375	3095	5625	5160
		mPa	1.79	1.65	4.65	4.27	9.31	8.54	13.9	12.8	23.2	21.3	38.8	35.5
-20 to 400° F (-28.8 to 204.4° C)	Max Working Pressure	psi	200	195	635	515	1270	1030	1900	1540	3170	2570	5280	4280
		mPa	1.38	1.34	4.38	3.96	8.76	7.09	13.1	10.6	21.8	17.7	36.4	29.5
-20 to 600° F (-28.8 to 315.5° C)	Max Working Pressure	psi	140	140	550	450	1095	905	1640	1355	2735	2255	4560	3760
		mPa	0.96	0.96	3.79	3.10	7.55	6.23	11.3	9.33	18.8	15.5	31.4	25.9
Test Pressure	1.5 times maximum working pressure at -20 to 100° F (28.8 to 37.7° C)													

*Flange Rating 1.1 References Carbon Steel Flanges. Flange Rating 2.2 References Stainless Steel Flanges



Companion readout instruments for NuFlo turbine flow meters are also available.

NuFlo Measurement Systems

A NuFlo Technologies Company

1.800.654.3760 • www.nuflotech.com

NuFlo Office Locations:

USA: • Houston, TX • Odessa, TX • Houma, LA • Bakersfield, CA • Broomfield, CO • Corpus Christi, TX • Duncan , OK • Layfayette, LA • Saginaw, MI • Dallas, TX • Longview, TX • Shreveport, LA • Laurel, MS • Casper, WY • Tulsa, OK

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For representation in your area:

Document NF 00001 02 1204

NUFLO MEASUREMENT SYSTEMS

NPT METERS

NuFlo Threaded Turbine Flow Meter
End Connections: National Pipe Thread
Working Pressure: Listed in the chart
Magnetic Pickup Conduit Connection: 1" male NPT

INDUSTRIAL GRADE

SIZE & END CONNECTION	Flow Range		Pressure Rating	Meter Part Num.	Rotor & Vane Kit Part Num.
	GPM	BPD			
3/8" x 1" M NPT	.3-3	10-100	7500 PSI	100003520	100003378
1/2" x 1" M NPT	.75-7.5	25-250	7500 PSI	100010219	100003379
3/4" x 1" M NPT	2-15	68-515	7500 PSI	100003523	100003380
7/8" x 1" M NPT	3-30	100-1000	5000 PSI	100003390	100061059
1" X 1" M NPT	5-50	170-1700	5000 PSI	100003525	100003381
1.5" M NPT	15-180	515-6000	5000 PSI	100003537	100003382
2" FM NPT	40-400	1300-13000	5000 PSI	100003534	100003383

STANDARD GRADE

SIZE & END CONNECTION	Flow Range		Pressure Rating	Meter Part Number	Rotor & Vane Kit Part Number
	GPM	BPD			
3/8" x 1" M NPT	.3-3	10-100	7500 PSI	100003519	100003521
1/2" x 1" M NPT	.75-7.5	25-250	7500 PSI	100003532	100003531
3/4" x 1" M NPT	2-15	68-515	7500 PSI	100003522	100003449
7/8" x 1" M NPT	3-30	100-1000	5000 PSI	100003389	100005124
1" X 1" M NPT	5-50	170-1700	5000 PSI	100003526	100003527
1.5" M NPT	15-180	515-6000	5000 PSI	100003536	100003469
2" FM NPT	40-400	1300-13000	5000 PSI	100003535	100003474

Meters are calibrated with water - for other fluids, consult Factory.
For fluids above 5 centistokes, consult Factory on sizes 3/8" through 3/4".

NOTE: Operation above 300°F requires silver soldered shaft and bearings.

MAGNETIC PICKUPS:

Type	Operating Range	Meter Size	Part No.
726509	-65°F to +250°F	3/8",1/2",3/4"	100002337
3030AN	-67°F to +250°F	7/8", up	100002077
3030HTB	-65°F to +450°F	all	100002076

Note: For operation above 450 deg. F, please consult factory.

NUFLO MEASUREMENT SYSTEMS

NuFlo Grooved Turbine Flow Meter
End Connections: Victaulic Grooved
Working Pressure: Listed in the chart
Magnetic Pickup Conduit Connection: 1" male NPT

INDUSTRIAL GRADE

SIZE & END CONNECTION	Flow Range		Pressure	Meter	Rotor & Vane Kit
	GPM	BPD	Rating	Part Num.	Part Num.
7/8" X 1"	3-30	100-1000	1000 PSI	x	100061059
1" X 1"	5-50	170-1700	1000 PSI	x	100003381
1.5" X 1.5"	15-180	515-6000	1000 PSI	x	100003382
1.5" X 2"	15-180	515-6000	1000 PSI	100062212	100003382
2" X 2.5"	40-400	1300-13000	1000 PSI	x	100003383
3" X 3"	80-800	2750-27500	1000 PSI	100079577	100061056
4" X 4"	100-1200	3400-41000	1000 PSI	101001595	100003384
6" X 6"	200-2500	6800-86000	800 PSI	x	100061057
8" X 8"	350-3500	12000-120000	800 PSI	101204807	100061058

STANDARD GRADE

SIZE & END CONNECTION	Flow Range		Pressure	Meter	Rotor & Vane Kit
	GPM	BPD	Rating	Part Number	Part Number
7/8" X 1"	3-30	100-1000	1000 PSI	x	100005124
1" X 1"	5-50	170-1700	1000 PSI	100062216	100003527
1.5" X 1.5"	15-180	515-6000	1000 PSI	100080258	100003469
1.5" X 2"	15-180	515-6000	1000 PSI	100003477	100003469
2" X 2.5"	40-400	1300-13000	1000 PSI	100014152	100003474
3" X 3"	80-800	2750-27500	1000 PSI	100005092	100003470
4" X 4"	100-1200	3400-41000	1000 PSI	100012085	100003473
6" X 6"	200-2500	6800-86000	800 PSI	100062754	100003471
8" X 8"	350-3500	12000-120000	800 PSI	101204847	100003472

Meters are calibrated with water - for other fluids, consult Factory.

NOTE: Operation above 300°F requires silver soldered shaft and bearings.

MAGNETIC PICKUPS:

Type	Operating Range	Meter Size	Part No.
726509	-65°F to +250°F	3/8",1/2",3/4"	100002337
3030AN	-67°F to +250°F	7/8", up	100002077
3030HTB	-65°F to +450°F	all	100002076

Note: For operation above 450 deg. F, please consult factory.

NUFLO MEASUREMENT SYSTEMS

EZ-IN RAISED FACE FLANGE

NuFlo EZ-IN Series BF(Between Flange) Turbine Flow Meter - Wafer Style Meters
End Connections: Mates with any ANSI raised face flange up through 1500#
Working Pressure: Depends on mating flanges
Magnetic Pickup Conduit Connection: 1" male NPT

INDUSTRIAL GRADE

Size		Flow Range		Meter	Rotor & Vane Kit
Meter	End Conn.	GPM	BPD	Part Num.	Part Num.
3/8"	1" RF	.3-3	10-100	101212462	100003378
3/8"	2" RF	.3-3	10-100	x	101209535
1/2"	1" RF	.75-7.5	25-250	100079843	100003379
1/2"	2" RF	.75-7.5	25-250	100062989	100062982
3/4"	1" RF	2-15	68-515	100079844	100003380
3/4"	2" RF	2-15	68-515	100062990	100062983
7/8"	1" RF	3-30	100-1000	100079846	100061059
7/8"	2" RF	3-30	100-1000	100079899	101209539
1"	1" RF	5-50	170-1700	100079847	100003381
1"	2" RF	5-50	170-1700	100005114	100062984
1½	2" RF	15-180	515-6000	100079581	100062985
2"	2" RF	40-400	1300-13000	100003550	100003549
3"	3" RF	80-800	2750-27500	100012086	100012104
4"	4" RF	100-1200	3400-41000	100062996	100062986
6"	6" RF	200-2500	6800-86000	100062776	100062987
8"	8" RF	350-3500	12000-120000	100062999	100062988

STANDARD GRADE

Size		Flow Range		Meter	Rotor & Vane Kit
Meter	End Conn.	GPM	BPD	Part Number	Part Number
3/8"	1" RF	.3-3	10-100	100079842	100003521
3/8"	2" RF	.3-3	10-100	100079724	100079691
1/2"	1" RF	.75-7.5	25-250	100014142	100003531
1/2"	2" RF	.75-7.5	25-250	100079661	100005122
3/4"	1" RF	2-15	68-515	100014143	100003449
3/4"	2" RF	2-15	68-515	100079662	100079674
7/8"	1" RF	3-30	100-1000	100079845	100005124
7/8"	2" RF	3-30	100-1000	100079810	100079811
1"	1" RF	5-50	170-1700	100009579	100003527
1"	2" RF	5-50	170-1700	100005115	100005123
1½	2" RF	15-180	515-6000	100005095	100005099
2"	2" RF	40-400	1300-13000	100003551	100003553
3"	3" RF	80-800	2750-27500	100003539	100003540
4"	4" RF	100-1200	3400-41000	100003552	100003554
6"	6" RF	200-2500	6800-86000	100009536	100012091
8"	8" RF	350-3500	12000-120000	100062998	100063004

Meters are calibrated with water - for other fluids, consult Factory.
For fluids above 5 centistokes, consult Factory on sizes 3/8" through 3/4".

NOTE: Operation above 300°F requires silver soldered shaft and bearings.

Magnetic Pickups

Type	Operating Range	Part No.
726509	-65°F to +250°F	100002337
3030AN	-67°F to +250°F	100002077
3030HTB	-65°F to +450°F	100002076

Note: For operation above 450 deg. F, please consult factory.

Accessories

Hardware Kit	(See Bulletin HDW-KIT)	
Installation Handle		100079570

NUFLO MEASUREMENT SYSTEMS

EZ-IN RTJ FLANGE

NuFlo Series BF(Between Flanges) Turbine Flow Meter - Wafer Style Mete
End Connections: Mates with specified ring joint flange
Working Pressure: Depends on mating flange
Magnetic Pickup Conduit Connection: 1" male NPT

INDUSTRIAL GRADE

Size		Flow Range		Meter	Rotor & Vane Kit
Meter	End Conn.	GPM	BPD	Part Num.	Part Num.
1"	2" CL1500 RTJ	5-50	170-1700	100079962	100062984
1"	2" CL2500 RTJ	5-50	170-1700	101212482	100062984
1-1/2"	2" CL1500 RTJ	15-180	515-6000	100079982	100062985
1-1/2"	2" CL2500 RTJ	15-180	515-6000	101201944	100062985
2"	2" CL1500 RTJ	40-400	1300-13000	100079969	100003549
2"	2" CL2500 RTJ	40-400	1300-13000	101212481	100003549
3"	3" CL900 RTJ	80-800	1300-13000	101212489	100012104
3"	3" CL1500 RTJ	80-800	2750-27500	100079965	100012104
3"	3" CL2500 RTJ	80-800	2750-27500	101202331	100012104
4"	4" CL900 RTJ	100-1200	3400-41000	100080015	100062986
4"	4" CL1500 RTJ	100-1200	3400-41000	100079958	100062986
4"	4" CL2500 RTJ	100-1200	3400-41000	x	100062986
6"	6" CL900 RTJ	200-2500	6800-86000	101212509	100062987
6"	6" CL1500 RTJ	200-2500	6800-86000	100079996	100062987
6"	6" CL2500 RTJ	200-2500	6800-86000	101212486	100062987
8"	8" CL900 RTJ	350-3500	12000-120000	101238358	100062988
8"	8" CL1500 RTJ	350-3500	12000-120000	100079998	100062988
8"	8" CL2500 RTJ	350-3500	12000-120000	x	100062988

STANDARD GRADE

Size		Flow Range		Meter	Rotor & Vane Kit
Meter	End Conn.	GPM	BPD	Part Num.	Part Num.
1"	2" CL1500 RTJ	5-50	170-1700	100079961	100005123
1"	2" CL2500 RTJ	5-50	170-1700	120020991	100005123
1-1/2"	2" CL1500 RTJ	15-180	515-6000	100079981	100005099
1-1/2"	2" CL2500 RTJ	15-180	515-6000	101201941	100005099
2"	2" CL1500 RTJ	40-400	1300-13000	100014144	100003553
2"	2" CL2500 RTJ	40-400	1300-13000	100079994	100003553
3"	3" CL900 RTJ	80-800	2750-27500	101208414	100003540
3"	3" CL1500 RTJ	80-800	2750-27500	100079964	100003540
3"	3" CL2500 RTJ	80-800	2750-27500	101202330	100003540
4"	4" CL900 RTJ	100-1200	3400-41000	101216028	100003554
4"	4" CL1500 RTJ	100-1200	3400-41000	100079954	100003554
4"	4" CL2500 RTJ	100-1200	3400-41000	x	100003554
6"	6" CL900 RTJ	200-2500	6800-86000	100080032	100012091
6"	6" CL1500 RTJ	200-2500	6800-86000	100079995	100012091
6"	6" CL2500 RTJ	200-2500	6800-86000	101212485	100012091
8"	8" CL1500 RTJ	350-3500	12000-120000	100079997	100063004
8"	8" CL2500 RTJ	350-3500	12000-120000	x	100063004

Meters are calibrated with water - for other fluids, consult Factory.

Operation above 300°F requires silver soldered shaft and bearings.

Magnetic Pickups

Type	Operating Range	Meter Size	Part No.
726509	-65°F to +250°F	3/8",1/2",3/4"	100002337
3030AN	-67°F to +250°F	7/8", up	100002077
3030HTB	-65°F to +450°F	all	100002076

Note: For operation above 450 deg. F, please consult factor

Accessories

Hardware Kit	(See Bulletin HDW-KIT)	100079570
Installation Handle		

NUFLO MEASUREMENT SYSTEMS

EZ-IN HARDWARE KITS AND CENTERINGS - RAISED FACE FLANGES

	HARDWARE KITS Includes bolts, nuts, gaskets, spreader nuts, centering rings and pickup adapter extension. Does not Include flanges.					CENTERING RINGS ONLY *4 REQUIRED*				
SIZE	150#	300#	600#	900#	1500#	150#	300#	600#	900#	1500#
1"	100014135	100009578	100009578	100079754	100079754	100079753	100079752	100079752	100079751	100079751
1½" & 2"	100003555	100003556	100003556	100003557	100003557	100007974	100007973	100007973	100014124	100014124
3"	100003558	100007860	100007860	100003559	100012105	100079569	100014122	100014122	100079568	100014120
4"	100003560	100003561	100003562	100063005	100063006	100014123	100014122	100014121	100014120	100079567
6"	100063007	100063008	100012106	100063009	100063010	100079566	100079565	100079564	100079563	100079562
8"	100063011	100063012	100063013	101209537	101209536	100079561	100079560	100079559	101209538	100079558

Note: 900# and 1500# hardware kits furnished with spiral wound gaskets. All other kits have non-asbestos nitrile gaskets.

EZ-IN HARDWARE KITS - RTJ RING JOINT FLANGES

	HARDWARE KITS Includes bolts, nuts, ring joint carbon steel gaskets, and spreader nuts. (Does not Include flanges)		
SIZE	900#	1500#	2500#
1½" & 2"	100014145	100014145	100080024
3"	101213513	100079971	101203294
4"	100079986	100079960	101209541
6"	100080034	100080023	Quote
8"	Quote	Quote	Quote

FLANGED METERS

NUFLO MEASUREMENT SYSTEMS

NuFlo Flanged Turbine Flow Meter
All prices are for unidirectional calibration
Working Pressure: Listed in the chart
Magnetic Pickup Conduit Connection: 1" male NPT

	FLANGED TURBINE FLOW METERS ***										
Flange Type	*3/8"	1/2"	3/4"	**7/8"	1"	1 1/2"	2"	3"	4"	6"	8"
150# RF-CS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100062687	100009810	100062751	100062806
150# RF-SS	100079875	100079871	100079865	100079553	100012055	100007858	100062810	100012081	100003538	100062761	100062817
300# RF-CS	N/A	N/A	N/A	100063049	100009850	100062214	100062648	100062722	100062752	100003541	100062809
300# RF-SS		100079872	100079868	100080097	100062625	100062215	100062649	100062667	100062434	100062801	100062822
600# RF-CS	N/A	N/A	N/A	100079703	100009850	100062213	100003533	100009535	100062717	100062796	100062824
600# RF-SS		100079872	100079868	100080097	100062625	100062632	100062652	1000062570	100062737	100062793	100062896
600# RJ-CS	N/A	N/A	N/A	100080170	100062577	100062608	100062662	100062682	100062745	100062783	100062827
600# RJ-SS	100080218	100080213	100080217	100080171	100079838	100062601	100062674	101212461			
900# RF-CS	N/A	N/A	N/A	100079657	100062217	100062211	100062681	100062614	100062701	100062789	100062792
900# RF-SS	100079876	100079873	100079869	100080172	100062620	100062604	101280834				
900# RJ-CS	N/A	N/A	N/A	100079788	100062580	100062556	100062686	100062847	100062694	100062833	100079819
900# RJ-SS	100080219	100079927	100080224	100080174	100061202	100062781	100062677	101212508	101003446	100061087	
1500# RF-CS	N/A	N/A	N/A	100079657	100062217	100062211	100062681	100062617	100062713	100062750	100062813
1500# RF-SS	100079876	100079873	100079869	100080172	100062620	100062604	101280834	101274519	100061100		
1500# RJ-CS	N/A	N/A	N/A	100079788	100062580	100062556	100062686	100062690	100062710	100062758	100062903
1500# RJ-SS	100080219	100079927	100080224	100080174	100061202	100062781	100062677	100062779	100062723	100079656	
2500# RF-CS	N/A	N/A	N/A	100080114	100080232	100062901	100062669	101212412	100062709		
2500# RF-SS	100079877	100079874	100079870	100080227	100080233	100080228					
2500# RJ-CS	N/A	N/A	N/A	100079572	100062885	100062597	100062573	100062734	100062769		
2500# RJ-SS		100080215	100079939	100080173	100080234	100079934	100061241		100079966		

* 3/8" Meter has 1/2" flanges
** 7/8" Meter has 1" flanges
*** Price does not include magnetic pickup

NOTES: *Operation above 300°F requires silver soldered shaft and bearings. (see Bulletin Custom Meters)*
Meters are calibrated with water - for other fluids, consult Factory.
For fluids above 5 centistokes, consult Factory on sizes 3/8" through 3/4".

Liquid Meter Kits

KITS: Size	Rotor & Vane Kit Part No.
3/8	100003378
1/2	100003379
3/4	100003380
7/8	100061059
1	100003381
1.5	100003382
2	100003383
3	100061056
4	100003384
6	100061057
8	100061058

Magnetic Pickups

Type	Operating Range	Meter Size	Part No.	
726509	-65°F to +250°F	3/8",1/2",3/4	100002337	
3030AN	-67°F to +250°F	7/8", up	100002077	
3030HTB	-65°F to +450°F	all	100002076	

Note: For operation above 450 deg. F, please consult factory.

NUFLO TECHNOLOGIES

SPECIAL METERS

Working Pressure: Listed in the chart
Magnetic Pickup Conduit Connection: 1" male NPT

HIGH PRESSURE THREADED INDUSTRIAL GRADE *(NOT CRN CERTIFIED)*

END CONNECTION	FLOW SIZE	PRESSURE RATING	FLOW RANGE		METER	ROTOR & VANE KIT
			GPM	*BPD*	PART NO.	PART NO.
1" M NPT	3/8"	10,000 PSI	.3-3	10-100	101204714	100003378
1" M NPT	1/2"	10,000 PSI	.75-7.5	25-250	100079970	100003379
1" M NPT	3/4"	10,000 PSI	2-15	68-515	101229362	100003380
1" M NPT	1"	10,000 PSI	5-50	170-1700	101230293	100003381
2" FM NPT	2"	10,000 PSI	40-400	1300-13000	100012083	100003383

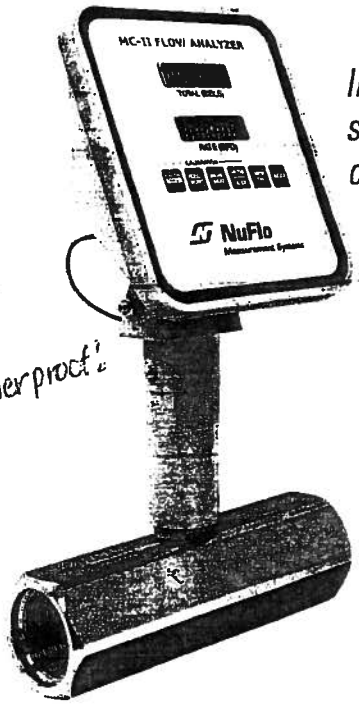
NuFlo

NuFlo™

MC-II Flow Analyzer

The MC-II Flow Analyzer provides separate, continuous digital displays of flow rate and accumulated flow based on input from a turbine flowmeter. The low current consumption of its liquid crystal displays and CMOS microprocessor based circuitry enable years of dependable performance from a single lithium battery. Typical battery life is 3 to 5 years.

Totalizer readings can be made in any desired volumetric units, and flow rates can be measured in units per second, minute, hour, or day. Rate and total are quickly and easily calibrated using the keypad on the front of the MC-II. The instrument is suitable for outdoor installation and requires no additional protection from the weather. The unit may be mounted directly on the turbine meter or attached remotely.



Improved, simplified calibration

Weatherproof

Specifications

(standard unit without options):

- Size: 7.3" wide x 8.3" high x 3.4" deep
- Weight: 6 lb including shipping container
- Power supply: One 3.6 volt lithium battery
- Current consumption: 200 microamps typical
- Temperature range: -40 to +140°F; -40 to +60°C
- Totalizer and flow rate display: Six digits
- Divisor or calibration factor range: 0.001 to 999,999
- Standard units: bbl and bpd (other units available)
- Accuracy: ±1 count (totalizer)
- Input frequency: 0 to 3,500 Hz
- Input amplitude: 30 to 3,000 mV peak to peak

Optional Features (specify those desired):

- Totalizer and flow rate units other than "bbl" and "bbl/day" – specify totalizer units and/or flow rate units
- Total reset: Password-secured access allows user to reset totalizer to zero from front panel
- Calibration enable: Password-secured access allows user to change calibration settings from front panel
- Remote mounting hardware:
  - Stainless steel, for installation on 2" nominal pipe, horizontal or vertical.
  - 10 ft signal cable assembly is standard with the remote mount option. (additional lengths are available - consult factory).
- Pulse output powered by customer's source
  - For intrinsically safe (50 - 60 ms duration), specify:
    1. Dry contact relay – 5 volt coil, 200 mA max, 6 VDC max
    2. Open collector transistor – 200 mA max, 6 VDC
    3. Optically isolated transistor – 100 mA, 6 VDC
  - For non-intrinsically safe (50 - 60 ms duration), specify:
    1. Relay – 5 V coil, 0.5 mA max, 30 VDC max, 10W max (resistive)
    2. Relay – 12 V coil, 0.5 mA max, 30 VDC max, 10W max (resistive)
    3. Relay – 24 V coil, 0.5 mA max, 30 VDC max, 10W max (resistive)
    4. Open collector transistor – 0.3 A max, 30 VDC max
    5. Optically isolated transistor – 0.1A max, 30 VDC max

Approvals

- CSA-certified in US and Canada, intrinsically safe in hazardous locations Class I, Division 1, Groups A, B, C, D; Type 4 enclosure
- ATEX certification pending

WARRANTY-LIMITATION OF LIABILITY: Seller warrants only title to the product, supplies, and materials and that, except to software, the same are free from defects in workmanship and materials for a period of one (1) year from the date of delivery. Seller does not warranty that software is free from error or that software will run in an uninterrupted fashion. Seller provides all software "as is". THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTENO BEYDND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Seller's liability and Buyer's exclusive remedy in any case of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any product, software, supplies, or materials is expressly limited to the replacement of such products, software, supplies, or materials on their return to Seller or, at Seller's option, to the allowance to the customer of credit for the cost of such items. In no event shall Seller be liable for special, incidental, indirect, punitive or consequential damages. Seller does not warranty in any way products, software, supplies, and materials not manufactured by Seller, and such will be sold only with the warranties that are given by the manufacturer thereof. Seller will pass only through to its purchaser of such items the warranty granted to it by the manufacturer.

NuFlo *Measurement Systems*

A NuFlo Technologies Company

North America: 1.800.654.3760 nuflotech@nuflotech.com

Singapore: 65.6737.0444 singapore@nuflotech.com

Bognor Regis, UK: 44.1243.826741 uk@nuflotech.com

USA: Houston, TX • Corpus Christi, TX • Longview, TX • Odessa, TX • Duncan, OK Shreveport, LA • Houma, LA • Lafayette, LA • Laurel, MS • Bakersfield, CA Saginaw, MI • Casper, WY • Broomfield, CO • Dallas, TX • Tulsa, OK

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For representation in your area:

Document NF 00016 03 1004

Direct Mount

100005130 Model MC-II Flow Analyzer, weatherproof housing, complete with one 3.6V lithium battery, 1 ft. signal cable with mating connector for electro-magnetic pickup, weatherproof pickup adapter and mounting bracket. Totalizer in barrels, rate indicator in BPD

Remote Mount

100005129 Model MC-II Flow Analyzer, weatherproof housing, complete with one 3.6V lithium battery, 10 ft. signal cable with mating connector for electro-magnetic pickup, weatherproof pickup adapter and mounting bracket. Totalizer in barrels, rate indicator in BPD

Direct Mount - Pulse Output - 12 volt (Non-Hazardous Areas)

101227768 Model MC-II Flow Analyzer, weatherproof housing, complete with one 3.6V lithium battery, 1 ft. signal cable with mating connector for electro-magnetic pickup, weatherproof pickup adapter and mounting bracket. Unit complete with 12 volt pulse output relay. (Relay - 12 volt coil - .5A max, 30 VDC max, 10 W resistive) Externally powered by customer - 10 mA typical. Totalizer in barrels, rate indicator in BPD

Remote Mount - Pulse Output - 12 volt (Non-Hazardous Areas)

101228283 Model MC-II Flow Analyzer, weatherproof housing, complete with one 3.6V lithium battery, 10 ft. signal cable with mating connector for electro-magnetic pickup, weatherproof pickup adapter and mounting bracket. Unit complete with 12 volt pulse output relay. (Relay - 12 volt coil - .5A max, 30 VDC max, 10 W resistive) Externally powered by customer - 10 mA typical. Totalizer in barrels, rate indicator in BPD

Direct Mount - Pulse Output - 24 volt (Non-Hazardous Areas)

101228319 Model MC-II Flow Analyzer, weatherproof housing, complete with one 3.6V lithium battery, 1 ft. signal cable with mating connector for electro-magnetic pickup, weatherproof pickup adapter and mounting bracket. Unit complete with 24 volt pulse output relay. (Relay - 24 volt coil - .5A max, 30 VDC max, 10 W resistive) Externally powered by customer - 10 mA typical. Totalizer in barrels, rate indicator in BPD

Remote Mount - Pulse Output - 24 volt (Non-Hazardous Areas)

101228291 Model MC-II Flow Analyzer, weatherproof housing, complete with one 3.6V lithium battery, 10 ft. signal cable with mating connector for electro-magnetic pickup, weatherproof pickup adapter and mounting bracket. Unit complete with 24 volt pulse output relay. (Relay - 24 volt coil - .5A max, 30 VDC max, 10 W resistive) Externally powered by customer - 10 mA typical. Totalizer in barrels, rate indicator in BPD

Direct Mount - Pulse Output - 5 volt - Intrinsically Safe

101231221 Model MC-II Flow Analyzer, weatherproof housing, complete with one 3.6V lithium battery, 1 ft. signal cable with mating connector for electro-magnetic pickup, weatherproof pickup adapter and mounting bracket. Unit complete with 5 volt pulse output relay. (Relay - 5 volt coil - 50 mA max, 10 VDC max, resistive) Externally powered by customer - 10 mA typical. Totalizer in barrels, rate indicator in BPD

Remote Mount - Pulse Output - 5 volt - Intrinsically Safe

101231147 Model MC-II Flow Analyzer, weatherproof housing, complete with one 3.6V lithium battery, 10 ft. signal cable with mating connector for electro-magnetic pickup, weatherproof pickup adapter and mounting bracket. Unit complete with 5 volt pulse output relay. (Relay - 5 volt coil - 50 mA max, 10 VDC max, resistive) Externally powered by customer - 10 mA typical. Totalizer in barrels, rate indicator in BPD

COMPASS

TO: Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

DATE: 8/11/2007

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports	X	Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y ____ N X

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
029	15500A, P2.2B	Corrugated Polyethylene Pipe	8/11/2007					

[ ] For Review & Approval [X] For Your Use

Deviations: None from the referenced Specification noted.

REMARKS/NOTES

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

PRINSCO
The pipe with the gold stripe.

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GOLDFLO
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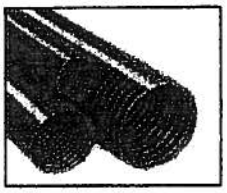

GOLDLINE®

Uses:
Heavy flow projects such as farms, golf courses, residential homes, septic systems, parking lots, athletic fields and other commercial applications.

Description:
Corrugated, Polyethylene Exterior
Load-Bearing Capacity of Concrete or Metal
Lightweight and Flexible
Corrosion-Proof
Acid, Alkali and Frost Resistant
Available in Coils or Lengths
Lengths Available with Lock-Fast® Coupler

Bottom Line Benefits:
Lightweight + Easy Maneuverability = Smaller Crews & Lower Heavy Equipment Costs
Superior Strength + Maximum Durability = Less Long-Term Maintenance and Repairs
Quick, Easy Installation = Less Production Time

Prinsco's **GOLDLINE** Single-Wall Polyethylene Pipe is made using a vacuum forming manufacture process resulting in superior strength and uniform wall thickness. All Prinsco GOLDLINE meets or exceeds ASTM F 405 and F 667 guidelines. It is also available in highway grades that meet AASHTO M 252 and M 294 requirements. The materials are chemical and abrasion resistnat and won't rust, corrode or deteriorate under freeze-thaw conditions.
GOLDLINE is available perforated and non-perforated. Perforated GOLDLINE is an excellent choice for drainage applications and is avaiable with geotexile wraps for drainage projects involving fine soil, sand or silt. Non-perforated GOLDLINE is a great choice for culverts and drains.
For ease of handling GOLDLINE is available in coils or sticks. Coils are available in pipe sizes 3" - 12" and sticks are available in easy to handle

10' and 20' lengths. For added convenience non-perforated 10' lengths are available with Prinsco Lock-Fast Integral Coupler. Each pipe end has four built in lugs, which snap into place by simply pushing the two adjoining pipe ends toghter. This efficient accessory eliminates the need for a separate coupler making installation fast and easy.

Our gold stripe is a symbol of our quality.

<

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PRINSCO
The pipe with the gold stripe.

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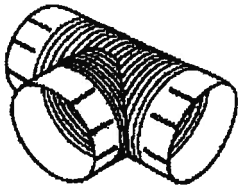

STRAIGHT TEE

Used in layouts requiring a lateral connection. Has three ends, all the same size.

Size	Number	Unit
4"	T0444	Each / Pkg. 20
5"	T0555	Each / Pkg. 5
6"	T0666	Each / Pkg. 5

< back

Submittal 029 - Corrugated Polyethylene Pipe

Description	Specification	Submittal
Manufacturer	Prinsco	Prinsco
Model	Goldline, Single Wall	Goldline, Single W
Standards	ASTM F-405-97	ASTM F405 and F667

Approved 08/20

COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

DATE: 8/14/2007

WE ARE SENDING YOU

X	Specifications		Plans		Invoice
	Drawings		Reports	X	Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y ____ N X

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
030	15500A	HDPE Pipe-Quality Cert	8/14/2007					

[ ] For Review & Approval [X] For Your Use

Deviations: None from the referenced Specification noted.

REMARKS/NOTES

Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

1806 WEST STONE AVENUE
FAIRFIELD, IA 52556-2151

March 22, 2007

DriscoPlex™ 4100 PRODUCT QUALITY CERTIFICATION

CUSTOMER: LEE SUPPLY COMPANY INC
PO BOX 35
CHARLEROI PA 15022
SHIP TO:
ATTENTION: JERRY BIAGINI

CUSTOMER ORDER NO: 7565
PERFORMANCE PIPE ORDER NO: 6422203
SHIPPING DATE: 03/20/07
EXTRUSION DATE(S): 12/29/06 THRU 12/31/06
DELIVERY #: 87361469

QUANTITY: 3,400'
PRODUCT: 10" IPS SDR 11.0 PE3408 – 50' JT BLK

This product quality certification letter for DriscoPlex™ 4100 series pipe has been prepared at your request. DriscoPlex™ 4100 series pipe is manufactured from polyethylene resin that meets Grade PE34 and a cell classification of 345464C in accordance with ASTM D 3350. DriscoPlex™ 4100 series pipe material is listed by the Plastic Pipe Institute in PPI TR-4 with a standard grade recommended hydrostatic design basis of 1600 psi at 73°F (23°C), and a recommended hydrostatic design basis of 800 psi at 140°F (60°C).

DriscoPlex™ 4100 series pipe is manufactured in accordance with the requirements of AWWA C906 and ASTM F 714 or AWWA C901 and ASTM D3035. Each length of DriscoPlex 4100 pipe is marked in accordance with the applicable standards. DriscoPlex™ 4100 series meets NSF standards 14 and/or 61 requirements for potable water piping systems, and AWWA requirements for water distribution.

Sincerely,
Larry Skinner
Larry Skinner
QA Supervisor
mju

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CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Fairfield
Product Description: 41P 10.00" SDR 11.00 0050'JT BLK I 14
PR #: 100465483
Line #: 314
Start Date: 12/29/2006
End Date: 12/31/2006

Minimum Wall (IN):	0.995	Minimum Toe-In(%):	-
Maximum Wall (IN):	1.096	Maximum Toe-In(%):	-
Minimum OD (IN):	10.738	Minimum Ring Tensile(PSI):	3743.577
Maximum OD (IN):	10.772	Minimum Ring Tensile(PSI):	4219.104
Minimum ID (IN):	8.548	Minimum Burst Pressure:	-
Maximum ID (IN):	8.725	Maximum Burst Pressure:	-
Minimum Eccentricity (%):	1.887	Minimum Density:	0.954
Maximum Eccentricity (%):	7.459	Maximum Density:	0.959
Minimum Out of Round (IN):	0.068	Minimum Carbon Black (%):	2.130
Maximum Out of Round (IN):	0.142	Maximum Carbon Black (%):	2.430
Minimum Ovality (%):	0.632	Minimum Melt Index:	6.700
Maximum Ovality (%):	1.317	Maximum Melt Index:	8.900

Resin: PE3408/3608

Number of Samples: 23

Ash is recorded under Carbon Black when Carbon Black is not present.

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

11711 Hopewell RD
Hagerstown, MD 21740

April 18, 2007

DriscoPlex® 4100 PRODUCT QUALITY CERTIFICATION

CUSTOMER: Lee Supply Co. Inc.
PO Box 35
Charleroi, PA 15022

ATTENTION: Jerry Biagini

CUSTOMER ORDER NO: 7000 18144 69
PERFORMANCE PIPE ORDER NO: 6391197
SHIPPING DATE: 03/09/07
DELIVERY NO: 87354613
QUANTITY: 8,000'
PRODUCT: 6" IPS DR 11 4100

This product quality certification letter for DriscoPlex® 4100 series pipe has been prepared at your request. DriscoPlex® 4100 series pipe is manufactured from polyethylene resin that meets or exceeds a material designation of PE3408/3608 and a minimum cell classification of 345464C in accordance with ASTM D3350. DriscoPlex®4100 series pipe material is listed by the Plastic Pipe Institute in PPI TR-4 with a standard grade recommended hydrostatic design basis of 1600 psi at 73°F (23°C).

DriscoPlex® 4100 series pipe is manufactured in accordance with the requirements of AWWA C906-99 and ASTM F714 OR AWWA C901-02 and ASTM D3035 depending on pipe size. DriscoPlex® 4100 series meets NSF standards 14 and/or 61 requirements for potable water piping systems.

Sincerely,

Sheri Eckles-Petrucci

Sheri Eckles-Petrucci
QA Supervisor

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CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Hagerstown
PR #: 100468980

Product Description: 41P 06.00" SDR 11.00 0040'JT BLK I 61
Line #: 05

Start Date: 2/3/2007

End Date: 2/4/2007

Minimum Wall (IN):	0.604	Minimum Toe-In(%):	0.452
Maximum Wall (IN):	0.651	Maximum Toe-In(%):	0.513
Minimum OD (IN):	6.620	Minimum Hoop Stress(PSI):	3583.000
Maximum OD (IN):	6.636	Minimum Hoop Stress(PSI):	3583.000
Minimum ID (IN):	5.248	Minimum Burst Pressure:	758.000
Maximum ID (IN):	5.405	Maximum Burst Pressure:	758.000
Minimum Eccentricity (%):	1.389	Minimum Density:	0.953
Maximum Eccentricity (%):	5.449	Maximum Density:	0.956
Minimum Out of Round (IN):	0.077	Minimum Carbon Black (%):	2.400
Maximum Out of Round (IN):	0.140	Maximum Carbon Black (%):	2.530
Minimum Ovality (%):	1.164	Minimum Melt Index:	8.100
Maximum Ovality (%):	2.112	Maximum Melt Index:	10.300

Resin: PE3408/3608

Number of Samples: 25

Ash is recorded under Carbon Black when Carbon Black is not present.

APR-19-2007 02:19 AM PERFORMANCEPIPE 3015826628 P.05

CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Hagerstown
PR #: 100461641

Product Description: 41P 06.00" SDR 11.00 0040'JT BLK I 61
Line #: 03

Start Date: 10/25/2006

End Date: 10/25/2006

Minimum Wall (IN):	0.615	Minimum Toe-In(%):	0.393
Maximum Wall (IN):	0.654	Maximum Toe-In(%):	0.559
Minimum OD (IN):	6.618	Minimum Hoop Stress(PSI):	3607.000
Maximum OD (IN):	6.623	Minimum Hoop Stress(PSI):	3607.000
Minimum ID (IN):	5.340	Minimum Burst Pressure:	748.000
Maximum ID (IN):	5.378	Maximum Burst Pressure:	748.000
Minimum Eccentricity (%):	2.181	Minimum Density:	0.955
Maximum Eccentricity (%):	6.260	Maximum Density:	0.957
Minimum Out of Round (IN):	0.120	Minimum Carbon Black (%):	2.470
Maximum Out of Round (IN):	0.165	Maximum Carbon Black (%):	2.650
Minimum Ovality (%):	1.813	Minimum Melt Index:	8.500
Maximum Ovality (%):	2.493	Maximum Melt Index:	10.300

Resin: PE3408/3608

Number of Samples: 17

Ash is recorded under Carbon Black when Carbon Black is not present.

CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Hagerstown
PR #: 100464670

Product Description: 41P 06.00" SDR 11.00 0040'JT BLK I 61
Line #: 05
Start Date: 11/30/2006
End Date: 11/30/2006

Minimum Wall (IN):	0.614	Minimum Toe-In(%):	0.302
Maximum Wall (IN):	0.652	Maximum Toe-In(%):	0.574
Minimum OD (IN):	6.619	Minimum Hoop Stress(PSI):	3568.000
Maximum OD (IN):	6.627	Minimum Hoop Stress(PSI):	3568.000
Minimum ID (IN):	5.338	Minimum Burst Pressure:	744.000
Maximum ID (IN):	5.383	Maximum Burst Pressure:	744.000
Minimum Eccentricity (%):	0.314	Minimum Density:	0.953
Maximum Eccentricity (%):	4.594	Maximum Density:	0.954
Minimum Out of Round (IN):	0.062	Minimum Carbon Black (%):	2.320
Maximum Out of Round (IN):	0.078	Maximum Carbon Black (%):	2.460
Minimum Ovality (%):	0.937	Minimum Melt Index:	8.400
Maximum Ovality (%):	1.178	Maximum Melt Index:	9.000

Resin: PE3408/3608

Number of Samples: 24

Ash is recorded under Carbon Black when Carbon Black is not present.

APR-19-2007 02:20 AM PERFORMANCEPIPE 8915826628 P.01

CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Hagerstown
PR #: 100464670
Product Description: 41P 06.00" SDR 11.00 0040'JT BLK I 61
Line #: 05
Start Date: 11/30/2006
End Date: 11/30/2006

Minimum Wall (IN):	0.614	Minimum Toe-In(%):	0.302
Maximum Wall (IN):	0.652	Maximum Toe-In(%):	0.574
Minimum OD (IN):	6.619	Minimum Hoop Stress(PSI):	3568.000
Maximum OD (IN):	6.627	Minimum Hoop Stress(PSI):	3568.000
Minimum ID (IN):	5.338	Minimum Burst Pressure:	744.000
Maximum ID (IN):	5.383	Maximum Burst Pressure:	744.000
Minimum Eccentricity (%):	-0.314	Minimum Density:	0.953
Maximum Eccentricity (%):	4.594	Maximum Density:	0.954
Minimum Out of Round (IN):	0.062	Minimum Carbon Black (%):	2.320
Maximum Out of Round (IN):	0.078	Maximum Carbon Black (%):	2.460
Minimum Ovality (%):	0.937	Minimum Melt Index:	8.400
Maximum Ovality (%):	1.178	Maximum Melt Index:	9.000

Resin: PE3408/3608

Number of Samples: 24

Ash is recorded under Carbon Black when Carbon Black is not present.

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

11711 Hopewell RD
Hagerstown, MD 21740

June 1, 2007

DriscoPlex® 4100 PRODUCT QUALITY CERTIFICATION

CUSTOMER: Lee Supply Co. Inc.
PO Box 35
Charleroi, PA 15022

ATTENTION: Jerry Biagini

CUSTOMER ORDER NO: 9100
PERFORMANCE PIPE ORDER NO: 6446778
SHIPPING DATE: 5/02/07
DELIVERY NO: 87394823
QUANTITY: 17,920'
PRODUCT: 4" IPS DR 11 4100

This product quality certification letter for DriscoPlex® 4100 series pipe has been prepared at your request. DriscoPlex® 4100 series pipe is manufactured from polyethylene resin that meets or exceeds a material designation of PE3408/3608 and a minimum cell classification of 345464C in accordance with ASTM D3350. DriscoPlex®4100 series pipe material is listed by the Plastic Pipe Institute in PPI TR-4 with a standard grade recommended hydrostatic design basis of 1600 psi at 73°F (23°C).

DriscoPlex® 4100 series pipe is manufactured in accordance with the requirements of AWWA C906-99 and ASTM F714 OR AWWA C901-02 and ASTM D3035 depending on pipe size. DriscoPlex® 4100 series meets NSF standards 14 and/or 61 requirements for potable water piping systems.

Sincerely,

Sheri Eckles-Petrucci

Sheri Eckles-Petrucci
QA Supervisor

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CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Hagerstown
PR #: 100473903

Product Description: 41P 04.00" SDR 11.00 0040'JT BLK I 61
Line #: 05

Start Date: 3/22/2007

End Date: 3/25/2007

Minimum Wall (IN):	0.413	Minimum Toe-In(%):	0.267
Maximum Wall (IN):	0.459	Maximum Toe-In(%):	0.824
Minimum OD (IN):	4.487	Minimum Hoop Stress(PSI):	3534.000
Maximum OD (IN):	4.505	Maximum Hoop Stress(PSI):	3576.000
Minimum ID (IN):	3.594	Minimum Burst Pressure:	728.000
Maximum ID (IN):	3.647	Maximum Burst Pressure:	744.000
Minimum Eccentricity (%):	2.975	Minimum Density:	0.954
Maximum Eccentricity (%):	8.222	Maximum Density:	0.957
Minimum Out of Round (IN):	0.030	Minimum Carbon Black (%):	2.480
Maximum Out of Round (IN):	0.153	Maximum Carbon Black (%):	2.580
Minimum Ovality (%):	0.666	Minimum Melt Index:	8.700
Maximum Ovality (%):	3.402	Maximum Melt Index:	9.700

Resin: PE3408/3608

Number of Samples: 83

Ash is recorded under Carbon Black when Carbon Black is not present.

CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Hagerstown
PR #: 100468818
Product Description: 41P 04.00" SDR 11.00 0040'JT BLK I 61
Line #: 04
Start Date: 2/3/2007
End Date: 2/3/2007

Minimum Wall (IN):	0.422	Minimum Toe-In(%):	0.245
Maximum Wall (IN):	0.456	Maximum Toe-In(%):	0.422
Minimum OD (IN):	4.500	Minimum Hoop Stress(PSI):	3803.000
Maximum OD (IN):	4.508	Maximum Hoop Stress(PSI):	3803.000
Minimum ID (IN):	3.596	Minimum Burst Pressure:	769.000
Maximum ID (IN):	3.652	Maximum Burst Pressure:	769.000
Minimum Eccentricity (%):	2.955	Minimum Density:	0.955
Maximum Eccentricity (%):	11.183	Maximum Density:	0.957
Minimum Out of Round (IN):	0.063	Minimum Carbon Black (%):	2.460
Maximum Out of Round (IN):	0.188	Maximum Carbon Black (%):	2.650
Minimum Ovality (%):	1.400	Minimum Melt Index:	8.100
Maximum Ovality (%):	4.180	Maximum Melt Index:	10.300

Resin: PE3408/3608

Number of Samples: 24

Ash is recorded under Carbon Black when Carbon Black is not present.

CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Hagerstown
Product Description: 41P 04.00" SDR 11.00 0040'JT BLK I 61
PR #: 100458581
Line #: 06
Start Date: 10/11/2006
End Date: 10/12/2006

Minimum Wall (IN):	0.410	Minimum Toe-In(%):	0.311
Maximum Wall (IN):	0.464	Maximum Toe-In(%):	0.467
Minimum OD (IN):	4.495	Minimum Hoop Stress(PSI):	3586.000
Maximum OD (IN):	4.509	Maximum Hoop Stress(PSI):	3586.000
Minimum ID (IN):	3.601	Minimum Burst Pressure:	729.000
Maximum ID (IN):	3.653	Maximum Burst Pressure:	729.000
Minimum Eccentricity (%):	2.691	Minimum Density:	0.956
Maximum Eccentricity (%):	9.783	Maximum Density:	0.957
Minimum Out of Round (IN):	0.121	Minimum Carbon Black (%):	2.360
Maximum Out of Round (IN):	0.156	Maximum Carbon Black (%):	2.840
Minimum Ovality (%):	2.690	Minimum Melt Index:	10.000
Maximum Ovality (%):	3.464	Maximum Melt Index:	10.300

Resin: PE3408/3608

Number of Samples: 41

Ash is recorded under Carbon Black when Carbon Black is not present.

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

11711 Hopewell RD
Hagerstown, MD 21740

June 7, 2007

DriscoPlex® 4100 PRODUCT QUALITY CERTIFICATION

CUSTOMER: Lee Supply Co. Inc.
PO Box 35
Charleroi, PA 15022

ATTENTION: Jerry Biagini

163002

CUSTOMER ORDER NO: 8237
PERFORMANCE PIPE ORDER NO: 6424275
SHIPPING DATE: 05/03/2007
DELIVERY NO: 87394322
QUANTITY: 3,520'
PRODUCT: 8" IPS DR 11 4100 40' JT

This product quality certification letter for DriscoPlex® 4100 series pipe has been prepared at your request. DriscoPlex® 4100 series pipe is manufactured from polyethylene resin that meets or exceeds a material designation of PE3408/3608 and a minimum cell classification of 345464C in accordance with ASTM D3350. DriscoPlex®4100 series pipe material is listed by the Plastic Pipe Institute in PPI TR-4 with a standard grade recommended hydrostatic design basis of 1600 psi at 73°F (23°C).

DriscoPlex® 4100 series pipe is manufactured in accordance with the requirements of AWWA C906-99 and ASTM F714 OR AWWA C901-02 and ASTM D3035 depending on pipe size. DriscoPlex® 4100 series meets NSF standards 14 and/or 61 requirements for potable water piping systems.

Sincerely,

Sheri Eckles-Petrucci

Sheri Eckles-Petrucci
QA Supervisor

Scanned | Indexed

CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Hagerstown
PR #: 100470813

Product Description: 41P 08.00" SDR 11.00 0040'JT BLK I 61
Line #: 02

Start Date: 2/24/2007

End Date: 2/25/2007

Minimum Wall (IN):	0.790	Minimum Toe-In(%):	0.591
Maximum Wall (IN):	0.905	Maximum Toe-In(%):	0.696
Minimum OD (IN):	8.605	Minimum Ring Tensile(PSI):	2940.398
Maximum OD (IN):	8.638	Maximum Ring Tensile(PSI):	2940.398
Minimum ID (IN):	6.827	Minimum Burst Pressure:	-
Maximum ID (IN):	7.026	Maximum Burst Pressure:	-
Minimum Eccentricity (%):	1.324	Minimum Density:	0.955
Maximum Eccentricity (%):	3.800	Maximum Density:	0.957
Minimum Out of Round (IN):	0.200	Minimum Carbon Black (%):	2.730
Maximum Out of Round (IN):	0.240	Maximum Carbon Black (%):	2.740
Minimum Ovality (%):	2.319	Minimum Melt Index:	8.300
Maximum Ovality (%):	2.788	Maximum Melt Index:	9.400

Resin: PE3408/3608

Number of Samples: 43

Ash is recorded under Carbon Black when Carbon Black is not present.

CHEVRON PHILLIPS PERFORMANCE PIPE

Plant: Hagerstown
PR #: 100475145

Product Description: 41P 08.00" SDR 11.00 0040'JT BLK I 61
Line #: 03

Start Date: 4/6/2007

End Date: 4/9/2007

Minimum Wall (IN):	0.803	Minimum Toe-In(%):	0.325
Maximum Wall (IN):	0.848	Maximum Toe-In(%):	0.638
Minimum OD (IN):	8.620	Minimum Hoop Stress(PSI):	3717.000
Maximum OD (IN):	8.639	Maximum Hoop Stress(PSI):	3717.000
Minimum ID (IN):	6.939	Minimum Burst Pressure:	783.000
Maximum ID (IN):	7.005	Maximum Burst Pressure:	783.000
Minimum Eccentricity (%):	0.718	Minimum Density:	0.954
Maximum Eccentricity (%):	5.399	Maximum Density:	0.956
Minimum Out of Round (IN):	0.127	Minimum Carbon Black (%):	2.490
Maximum Out of Round (IN):	0.220	Maximum Carbon Black (%):	2.620
Minimum Ovality (%):	1.472	Minimum Melt Index:	8.500
Maximum Ovality (%):	4.557	Maximum Melt Index:	9.900

Resin: PE3408/3608

Number of Samples: 90

Ash is recorded under Carbon Black when Carbon Black is not present.

COMPASS ENVIRONMENTAL, INC.

TO : Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com
Stuart Klaus, sklaus@secor.com

From: Jerry Resnik-Compass Environmental

DATE: 8/14/2007

PROJECT: Former Sinclair Wellsville Re
22070706R
Contract #RM2007-06

WE ARE SENDING YOU

	Specifications		Plans		Invoice
X	Drawings		Reports	X	Information/Data
	Qualifications		Samples		Other:

Resident Engineer
Response Requested:
Y X N

Submittal #	Spec Section	Submittal Title	Date Submitted	Approved	Disapproved	Approved as Noted	Approval/Date	Resubmittal #
031-018A	Dwg	Cascade Bowls	8/14/2007					

[ ] For Review & Approval [X] For Your Use

Deviations: None from the referenced Specification noted.

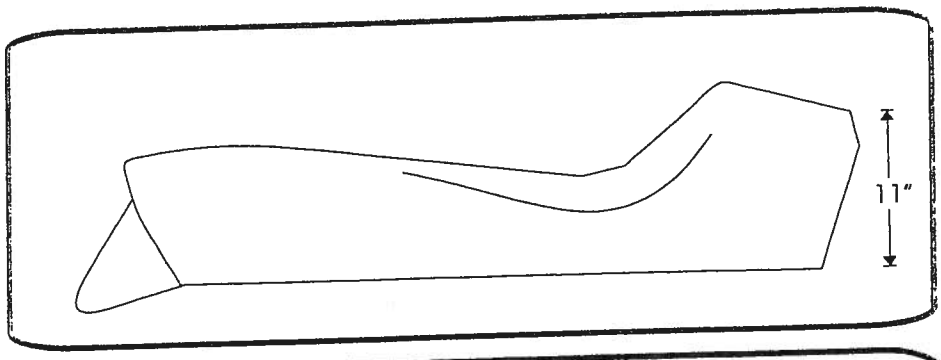
REMARKS/NOTES Resubmittal of 018 based on revised dwg received.

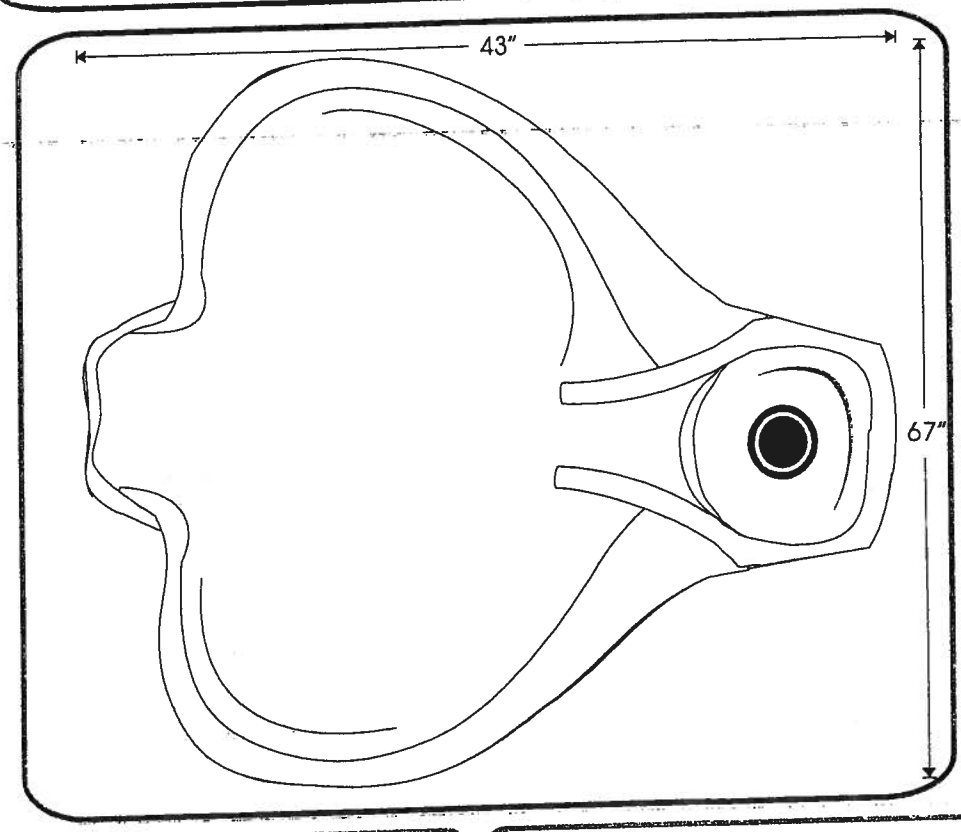
Copies To: Mike Vails
File

From: Jerry Resnik
Senior Project Manager

Mountain Stream

Shop Drawing





PRODUCT SPECIFICATION

Material	Solid Cast Gray Portland Concrete
Dimensions	
Length	43"
Height	11"
Width	67"
Quantity	4
Aerator Type	Entry 4"
Flow Rate	3500-4000 GPH
Can be Supplied as...	Single vessel -or- ~~Kit: three vessels, pump, connectors, and hose~~

Approval /Authorization

Project Name:	Former Sinclair Refinery Wellsville, New York
Issued By	Sven Schunemann
Date	July 30th 2007
Aproved By	
Date	

Flowforms America

Flowforms Americ Inc. W2890 County Road ES, East Troy, WI 53120 Tel: 262 642 2810 Fax 262 642 3375

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

TO: Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 8/15/2007

WE ARE SENDING YOU

[ ]	Specifications	[X]	Plans	[ ]	Invoice
[ ]	Drawings	[ ]	Reports	[ ]	Information/Data
[ ]	Qualifications	[ ]	Samples	[ ]	Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
032-007A	01400, p2.1	Revised CQAP	8/15/2007						

[ ] For Review & Approval [X] For Your Use

REMARKS: No deviations noted

Copies To: Mike Valis
File

From: Jerry Resnik
Senior Project Manager

COMPASS ENVIRONMENTAL, INC.

Construction Quality Assurance Plan

for the

Phase II-1 Remedial Construction at the

Former Sinclair Refinery Site-OU2 Wellsville, NY

Prepared for:

Atlantic Richfield Company
28100 Torch Parkway
Warrenville, IL 60555

Prepared by:

Compass Environmental, Inc.
92 North Main Street
Unit 20B
PO Box 10
Windsor, New Jersey 08561

July, 2007

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Section 1.0 Introduction

1.1 Compass' Corporate Quality Management

Compass Environmental, Inc.'s (Compass) corporate quality system is based on a "process approach" to quality management which includes the following key elements:

- identification of processes needed for the quality system;
- determination of the sequence and interactions of these processes;
- determination of the criteria and methodologies required to ensure the effective operation and management of these processes;
- ensuring the availability of resources and information necessary to support the operation and monitoring of these processes; and
- monitoring, measuring, and analyzing the processes to implement actions necessary to achieve planned results and continual improvements.

This Construction Quality Assurance Plan (CQAP) has been prepared for work being conducted by Compass as part of the Phase II – 1 remedial construction project located at the former Sinclair Refinery Site-OU2 in Wellsville, New York (Site).

This CQAP has been developed to identify personnel, procedures, controls, tests, records, and forms necessary to ensure the quality of construction required by the contract documents.

1.2 Scope of Work

The work to be performed consists of the following primary activities:

- preparation of project submittals;
- mobilization and site preparation;
- installation of the "Pilot Trench";
- installation of manholes;
- installation of meter box, piezometers, and transfer piping;
- various electrical construction;
- construction of sludge dewatering beds;
- construction of sedimentation pond;
- construction of surface flow wetlands;
- construction of vertical flow wetlands;
- restoration of site surfaces and seeding; and
- removal of temporary facilities and demobilization

A complete description of Compass' work activities from mobilization to demobilization is described in the previously submitted Site Management Plan.

1.3 Project QA/QC Objectives

The CQAP is intended to meet the following objectives:

- ensure that construction requirements comply with the design and performance standards contained in the Technical Specifications; and
- specify inspection, testing, and documentation requirements for compliance with the "Technical Specifications".

Section 2.0 Project Quality Control Management Organization

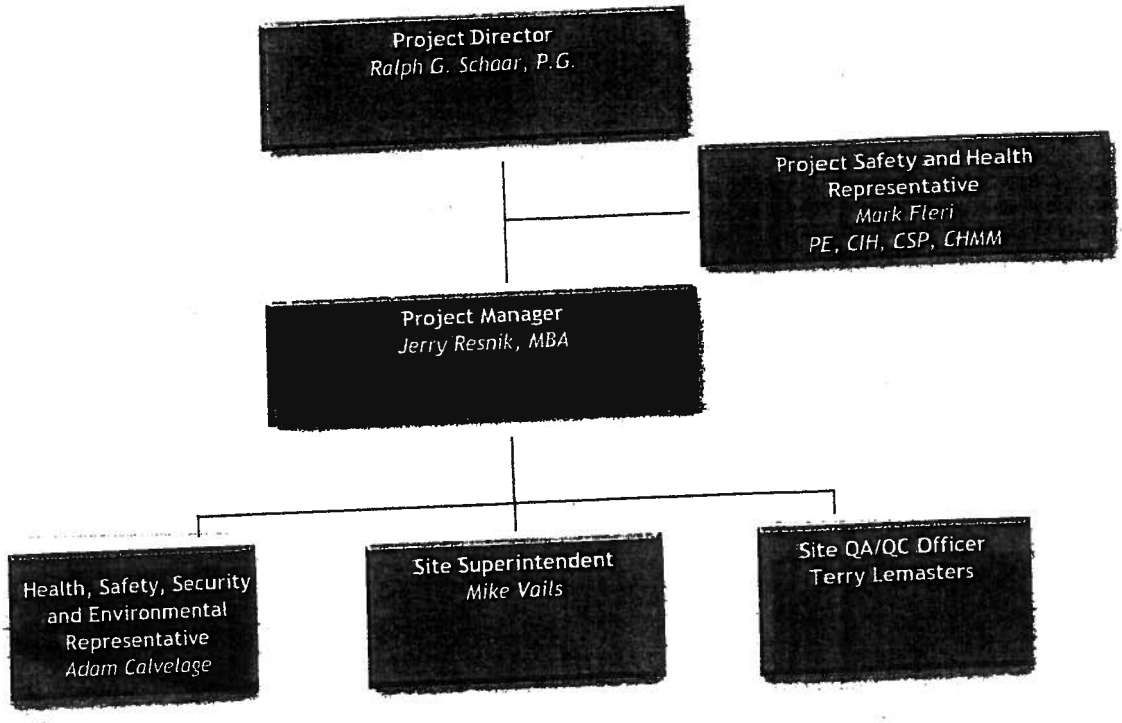
Compass will staff the Former Sinclair Refinery Site project with highly trained and very experienced employees. A brief description of the responsibilities of Compass' key personnel is outlined below.

The project organization and the project schedule are dynamic and may be modified throughout the project as required. Atlantic Richfield Company (Atlantic Richfield) will provide construction oversight for the remediation project.

2.1 Project Organization

Compass' project organization is presented in Figure 2-1. Key project management personnel are identified in both the home office and in the field.

Figure 2.1 Project Organization Chart



Project Director

Compass' Project Director, Ralph G. Schaar, is the senior manager with overall responsibility for the financial, operational, and health and safety aspects of the project. As necessary, the Project Director interacts with the client, regulatory agencies, and Compass' project management. Specific duties will include client interaction and contract negotiations. The Project Director will also be responsible for technical review and project oversight for overall site construction activities.

Project Manager

Compass' Project Manager, Jerry Resnik, is the key professional responsible for the day-to-day operations as well as technical and administrative management of the project. The Project Manager will communicate directly with the client and with Compass' senior management. His specific responsibilities include:

- provide centralized leadership for all project activities;
- manage and oversee all field operations;
- ensure that work is performed in accordance with the client's specifications, industrial standards, and all applicable regulatory requirements;
- internally approve work products, plans, and deliverables;
- maintain overall responsibility for preparation and planning of documents for the work;
- evaluate and identify resource requirements by defining resource needs and securing the commitments for staff and equipment;
- develop, review, and meet work schedule and budget objectives;
- prepare for, and attend, meetings as required;
- prepare Monthly Progress Reports;
- provide guidance to personnel working at the project site;
- ensure health and safety performance onsite and ensure the labor force complies with all health and safety standards; and
- maintain daily contact with the off site support personnel, informing them of the project status.

To carry out these functions, Compass' Project Manager will have the authority to:

- assign work to staff and procure subcontractors;
- allocate additional personnel as needed;
- establish and monitor work budgets and schedules with respective milestones;
- review and approve subcontractor/vendor invoices; and

- ensure that all quality and safety standards are achieved and maintained in accordance with Atlantic Richfield's expectations, pertinent regulations, and the technical specifications.

Site Superintendent
Compass' Site Superintendent, Mike Vails, will lead field efforts for the project work. The Superintendent's responsibilities include, but will not be limited to:

- overseeing all aspects of the project work including soil and debris handling and processing activities, as well as auxiliary operations;
- direct supervision of operators and laborers;
- ensuring all operators and laborers are familiar with the appropriate work plans and associated requirements as necessary to complete work assignments;
- ensuring that the completed work achieves the performance requirements;
- ensuring compliance with operating procedures as outlined in the applicable work plans, as well as OSHA and EPA regulations;
- coordinating with the client's engineer to ensure adequate implementation of the project QA/QC requirements;
- implementing the preventative maintenance program and maintaining housekeeping requirements;
- onsite equipment maintenance and repair;
- analyzing equipment problems and responding to emergencies;
- monitor and evaluate assigned personnel's and compliance with pertinent health and safety standards;
- maintaining a detailed daily logs of all job site activities;
- administration of site office, including coordination of timesheets, expense reports, and miscellaneous other reports;
- reporting progress of site work to the Compass Project Manager; and
- assisting the Compass Project Manager with labor force scheduling including work schedules, vacation schedules, disciplinary paperwork, daily logs, and purchase orders.

Operators and Laborers
Job duties may include but will not be limited to:

- safely and efficiently executing the field operation tasks in accordance with the technical specifications;
- operation, maintenance, and limited troubleshooting of equipment;
- maintaining an orderly, safe, and compliant workplace;

- performing of daily equipment inspections;
- maintaining of pertinent record;
- performing spill management activities; and
- performing other duties as directed by the Project Manager, Superintendent or their respective designees.

Operator and laborer personnel – as well as all on-site project staff and personnel will possess the following training:

- OSHA 40-hour hazardous waste operations and emergency response training and pertinent 8-hour refresher training;
- Atlantic Richfield site-specific training;
- SSHASP training;
- complete familiarity with the Hazardous Communication Plan (HCP) and Material Safety Data Sheets (MSDSs);
- Job or task-specific training for operation, troubleshooting, and maintenance of equipment;
- Job Hazard Analyses (JHAs); and
- review of appropriate work plans and associated requirements as necessary to complete work assignments.

The following paragraphs outline the structure and reporting requirements of Compass' Health and Safety management and oversight team. To insure truly independent monitoring and evaluation of the health and safety performance, the corporate and onsite health and safety staff will report independently from the project management structure to the corporate health and safety group.

Project Safety and Health Representative (PSHR)
As the PSHR, Mr. Mark Fleri, CIH, CSP, P.E., is responsible for the overall health and safety aspects of the project. He will ensure that all personnel working at the site are being protected and that there is no unnecessary adverse impact to the environment. He is responsible for all aspects of Compass' Health and Safety Program. He develops safety incentives and programs to minimize accidents and near misses and maintain a low total reportable incident rate. He will be responsible for implementation of the site-specific Health and Safety Plan (SSHASP).

Health, Safety, Security and Environmental Representative
Compass' Health, Safety, Security and Environmental Representative (HSSE REP), Mr. Adam Calvelage, is responsible for implementing the SSHASP, conducting safety observations, and training employees on safety procedures. His key responsibilities include:

- ensuring site personnel possess necessary training and medical surveillance requirements;
- conducting – at a minimum - daily safety meetings;
- establishing work zones and relocate zones as necessary;
- conducting personnel and perimeter air monitoring;
- determine personnel protective equipment requirements for specific work tasks and order any changes based on work area monitoring data;
- ensuring work is performed in compliance with SSHASP and applicable regulations;
- performing routine safety inspections;
- reporting and investigating any violations, incidents, and/or accidents; and
- updating work progress to Compass' corporate health and safety management team.

Upon consultation with the Project Manager, the HSSE REP has the authority to stop any operation that he perceives to be hazardous to personnel or has adverse impact to the environment. Should the hazard to personnel or the environment be immediate, he has the authority to stop operations at once. After stopping the operation, the Project Manager will be informed and an Unsafe Work Practice Report will be completed. Compass will consult with Atlantic Richfield regarding Atlantic Richfield's' near miss procedures and subsequent reporting and/or notification policy. The parties directly responsible, including the PSHR, Project Director, Project Manager, and the Site Superintendent, will review all reports submitted.

The HSSE REP is responsible for preparing all safety response actions and coordinating training programs. In the event of an emergency, he is the alternate responsible for managing response activities. The Emergency Coordinator, as defined in the Contingency Plan, is the primary individual responsible for managing response activities.

The HSSE REP is responsible for conducting inspections of equipment and operating procedures to ensure compliance with the SSHASP. A formal report is required for any inspection. This report becomes part of the formal record and report to management.

Any problems found during an inspection and actions taken to resolve the problem(s) are placed into the record.

Compass' QA/QC Officer, Terry LeMasters will be onsite during the project and will lead at associated QA/QC efforts. The QA/QC Manager's responsibilities include, but will not be limited to:

- verifying that all materials and equipment meet the technical specifications
- ensuring that installation procedures and protocols have been properly identified and are adhered to in accordance with the manufacturers guidelines and the technical specifications
- ensuring that all required physical testing is performed, witnessing these tests when possible and reviewing test documentation and collation
- Performing all paperwork necessary to document QA/QC activities

Training
Required and appropriate for their specific discipline as required by BP.

Section 3.0 Inspections

QC Inspections will be conducted for each definable feature of the work. A checklist of these inspections is included as Table 3.1. The Site QA/QC Officer or his designee will perform inspections.

Table 3.1 Checklist of Inspections

TASK	PHASE		
	I	II	III
General Site Preparation			
Installation of support facilities			
Clearing, Grubbing and Erosion/Sediment Control			
Initial Surveys and /Utility Locate			
Temporary fencing			
Decontamination Pad construction			
Laydown and Stockpile area construction			
Limited Demolition			
Site Work			
Manhole H Installation and Associated Dewatering			
Pilot Trench Installation			
Transfer Piping Corridor Installation			
Sedimentation Pond Construction			
Sludge Drying Bed Construction			
Surface Flow Wetland Construction			
Vertical Flow Wetlands Construction			
Flow Measurement Structure Construction			
Cascade Aerator System Construction			
Water Main and Yard Hydrant Installation			
Electrical Construction			
Site restoration activities			
Onsite Testing			
Earthwork testing			
Fill Material Testing			
Pipe Testing			
Electrical Testing			
Liner testing			
Surveying			
Initial			
Follow-Up			
Completion			

Inspections will be three-phase: Initial, Follow-Up, and Completion. Documentation of the inspection and tracking of deficiencies will be made using the Daily Construction Quality Assurance Report (DCQAR) described in Section 6.3.

3.1 Phase I - Initial

The Phase I Initial inspection shall be performed prior to beginning each feature of the work. Phase I inspections for each feature of work will include:

1. A review of submittals, as applicable and all other Contract requirements with the foremen or supervisors directly responsible for the performance of the work.
2. Checks to ensure that provisions have been made for required field control testing.
3. Examination of each work area to ascertain that all prerequisite work items have been completed.
4. Physical examination of the materials and equipment required for the Feature of Work.
5. Review of procedures, plans, quality of workmanship and control testing required for accomplishing the work in compliance with the project requirements.
6. A review of any dimensional requirements and a discussion of any known or anticipated problems will be discussed and reviewed.

3.2 Phase II – Follow-Up

Phase II inspections will be performed at least daily during the execution of the each Definable Feature of Work to ensure compliance with all project requirements, including controls testing. The Site Superintendent and Site QA/QC Officer or designee will be physically on site whenever construction is in progress.

3.3 Phase III - Completion

Phase III inspections will be performed at the completion of, or critical point, each Definable Feature of Work to ensure compliance with all of the contract requirements. A complete inspection of the work will be made and a punch list of any non-conforming aspects will be generated-if required. This list will include estimated dates for non-conforming items to be corrected by. A second inspection will be made if required.

Section 4.0 Documentation and Submittals

The Site Superintendent or his designee will maintain a Field Log Book to summarize construction activities. In addition to the Field Log book, the Site QA/QC Officer will prepare the DCQAR. The DCQAR, further described in Section 6.3, will provide Atlantic Richfield with information concerning daily operations at the site.

The Project Manager, Site Superintendent and/or the Site QA/QC Officer will review internally generated submittals, as well as material from suppliers and lower-tier subcontractors. The submittals will be carefully reviewed for compliance with the Technical Specifications, contract drawings, and contract requirements.

A monthly status report will be submitted with the monthly invoice.

Section 5.0 Testing

5.1 General

All quality control testing by Compass will be conducted in accordance with the Technical Specifications. Anticipated testing includes those phases of work delineated in Table 3.1. Inspection procedures will be three-phase, as discussed in Section 3.0.

5.2 Schedule of Tests

The Site Superintendent or his designee will schedule testing throughout the project based on the frequency of testing described in accordance with the Technical Specifications. Anticipated testing methods and frequencies are included in Table 5.1.

5.3 Testing Procedures

Qualified personnel will perform field-testing activities in accordance with approved procedures. The on-site Atlantic Richfield representative will be notified prior to conducting field tests.

5.4 Documentation

Compass will attach the results of all inspections and a list of the tests performed to our project Daily Construction Quality Assurance Report (DCQAR). This information will be submitted to the Atlantic Richfield onsite representative on the next regularly scheduled workday. Verbal test results of current activities will be provided to engineer immediately. The Qualifications of the analytical and physical laboratories proposed to do the testing will be submitted to SECOR and BP for approval.

TABLE 5.1 Testing Methods and Frequencies

Following is a list of the required tests by major work classification.

	Test	Frequency	Standard
Earthen Backfill	ASTM D698	1 per Type of Material or 1 per 5,000 cy3	93% Density at +/- Moisture
Granular Bedding	ASTM D2922 ASTM D3017	1 per Lift or 1 per 10,000 sq ft per Lift, whichever is greater. Minimum of 1 Test per Lift, per 50 ft of Trench	
Imported Materials	15 minute jar test analytical per specifications	Each Truck Each Source	¼ " Fines Per Specifications
Liner	Vacuum Test Water Balance	All Seams Completed Liner	No Leaks Statistical Analysis
Concrete	ASTM C31	3 Per 50 cy	7 Day – 2,500 psi 30 Day – 4,000 psi
Pipe Testing	Per Manufacturers Recommendation	All	No Leaks

In addition to the testing listed above, analytical testing will be performed on imported fill materials as listed in Section 02210 of the Project Specifications. Chemical testing will be performed by STL, their certification number is NYSDOH ELAP 11179.

The threshold limit for noise is 85 db, for dust-1 milligram per cubic meter and volatiles is 5 ppm. These are outlined in the Project HASP.

The activities and progress at the site will be periodically photo documented and one set submitted to the Atlantic Richfield Co., Resident Engineer and QA Official. A photo log will accompany the photographs.

Section 6.0 Deficiencies

6.1 Corrective Action

During the execution of project operations, conditions may exist which require corrective action. To control these situations and provide an opportunity for the responsible parties to contribute to the solution, a Corrective Action Program will be implemented. Conditions requiring corrective action will be identified, documented, and submitted for review by the assigned responsible party. Once the corrective action is complete, the Site Superintendent shall verify the original condition has been corrected. The Daily Construction Quality Assurance Report will keep the Atlantic Richfield field representative informed of routine quality issues.

6.2 Control of Lower-Tier Subcontractors

Control procedures for lower-tier subcontractors will be the same as for work conducted by Compass. As such, all lower-tier subcontractors will be required to read and understand all plans associated with their respective responsibilities prior to conducting work on site. This will allow the subcontractors to recognize and communicate quality control issues and abide by the proper chain of command.

6.3 Daily Construction Quality Assurance Report

Compass will complete and submit a DCQAR each day and will attach the results of all inspections, tests, and related activities to the DCQAR. This information will be submitted to the Atlantic Richfield field representative on the first workday following the date covered by the report. The Site Superintendent is responsible for submitting the DCQAR and all associated results.

The Site Superintendent will certify that the results are complete and accurate, and that all material and equipment used, work performed, and tests conducted during the reporting period are in accordance with the specifications. Exceptions or conflicts will be noted along with corrective actions taken or to be taken.

The DCQAR will include the following information, as appropriate:

- Compass/subcontractors and their respective area of responsibility.
- Operating plant/equipment with hours worked, idle, or down for repair.

- Work performed each day, giving location, description and by whom.
- Specific inspections performed (such as E&S controls and material storage) and results of these inspections (including corrective actions).
- Test and/or control activities performed with results and references to specifications/drawings requirements.
- Potentially changed conditions.
- Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- Submittals reviewed, with contract reference, by whom, and action taken.
- Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- Instructions given/received and conflicts in plans and/or specifications.
- Contractor's verification statement.
- Off-site surveillance of fabricated items.
- Prevailing weather conditions.
- Miscellaneous pertinent observations/comments.

A Weekly Summary Progress Report will be submitted prior to the Progress Meeting.

Section 7.0 Work Modification Procedures

During execution of the project, Atlantic Richfield may request assistance from Compass on various aspects of the project that are outside of the scope of work defined by the Technical Specifications and the Contract Agreement. Therefore, it may be necessary to modify the scope of work, schedule, or contract amount. In such cases, Compass will initiate and monitor construction change orders in accordance with the requirements of the Contract Documents.

COMPASS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

To: Ken Hannon, khannon@secor.com
Srinivas Kappagantula, skappagantula@secor
Jen Menges, jmeges@secor.com
Joe Sontchi, Jsontchi@bp.com

PROJECT: Former Sinclair Wellsville Refinery
22070706R
Contract #RM2007-06

From: Jerry Resnik-Compass Environmental

DATE: 8/20/2007

WE ARE SENDING YOU

	Specifications	X	Plans		Invoice
	Drawings		Reports	X	Information/Data
X	Qualifications	X	Samples		Other:

Submittal Number	Spec Section	Submittal title	Date Submitted	Approved	Disapproved	Approved as Noted	Approved/Date	Resubmittal #	Comments
033	02261, P1.4	Liner Installer-Quals-Instr-Other	8/20/2007						

	For Review & Approval	X	For Your Use

REMARKS: No deviations noted

Copies To: Mike Valls
File

From: Jerry Resnik
Senior Project Manager

Landsaver Environmental
Geosynthetic Installation Professionals

Former Sinclair Refinery

Wellsville NY

Job # C3022

2nd Submittal Documents

August 13, 2007

Landsaver Environmental
Geosynthetic Installation Professionals
A Division of ACF Environmental

Mark Tilley
Project Manager
Direct: 804-275-4172
Mobile: 804-335-6462

2831 Cardwell Rd.
Richmond, VA 23234
1-800-588-9223
Fax: 804-271-8044
mark@landsaver.net

Landsaver Environmental
Geosynthetic Installation Professionals
A Division of ACF Environmental

Jule Mueller
Project Administrator
Direct: 804-275-4173

2831 Cardwell Road
Richmond, VA 23234
1-800-588-9223
Fax: 804-271-8044
jmueller@acfenvironmental.com

2831 Cardwell Road • Richmond, VA 23234 • Fax (804) 271-8044 • 1-800-588-9223
A Division of ACF Environmental

LANDSAVER ENVIRONMENTAL

a division of ACF Environmental, Inc.
2831 Cardwell Rd. * Richmond, VA 23234
TEL: 800-588-9223 * FAX: 804-271-8044

SUBMITTAL LETTER

Submittal No: 2
Submittal Date: 8/14/2007

PROJECT SUMMARY

PROJECT NAME:	Former Sinclair Refinery		
CONTRACTOR:	Compass Environmental, Inc.	CONTRACTORS REP:	Jerry Resnik
SUBCONTRACTOR:	Landsaver Environmental	PROJECT MANAGER:	Mark Tilley
SUBS. PROJECT NO.:	C3022		

SUBMITTAL DESCRIPTION:	Pre-Submittal
02661-3 1.4 Submittals B.1	Product Samples
02661-3 1.4 Submittals B.2	AGRU Installation Manual
02661-3 1.4 Submittals B.2	AGRU Sample Warranty
02661-3 1.4 Submittals B.3	Panel Layout
02661-5 1.4 Submittals B.4 & B.8.c	Landsaver Installation Procedure
02661-5 1.4 Submittals B.8.c	Landsaver Sample Warranty
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02661-5 1.4 Submittals B.8.d	AGRU's Certification of Landsaver
Drawing Page7B Detail A-A	Aluminum Roof Flashing Detail

APPROVED SUBMITTALS:

02661-3 1.4 Submittals B.1 Material Specifications

Notes:

This form must be returned signed/approved before installation begins.
Please contact our office with any questions or concerns.

Jule Mueller -Project Administrator Phone: 804-275-4173 Fax: 804-271-8044 Email: Jule@Landsaver.net

Approved: ☐
Approved as noted: ☐
Resubmit: ☐

Approved by: _____
Signature _____
Date _____

INSTALLATION MANUAL

Agru America, Inc. is not an installer of Geosynthetics and does not represent as such. This manual has been developed only as a guideline and not meant as an authority of exactitude. Agru America will not be held liable for the installation of others.

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APPENDIX "A"

Daily Progress Report

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1.0 GEOSYNTHETIC INSTALLATION

1.1 Anchor Trench Systems

All Anchor Trench Systems shall be excavated by the Earthwork Contractor (unless otherwise specified) in accordance with the lines and widths shown on the contract drawings, prior to geosynthetic placement.

If the anchor trench is excavated in clay susceptible to desiccation, no more than the amount of trench required for the geosynthetics to be anchored in one (1) day will be excavated (unless otherwise specified) to minimize desiccation potential of the anchor trench clay soils.

The corners of the trench where the geosynthetics enter the trench should be slightly rounded to avoid sharp bends in the geosynthetics. No large rocks or clay lumps will be allowed to underlie the geosynthetics in the anchor trench.

Backfilling of the anchor trench will be conducted in accordance with Section 1.5.

1.2 Geosynthetic Placement

Immediately prior to installation of any geosynthetics, the surface will be inspected by Agru America, Inc. and the owner or the owner's representative. The decision to repair cracks, if any, will be made only by the owner's representative. The subgrade will be walked by Agru America, Inc. and the Project Manager for joint approval. Agru America, Inc. will sign acceptance of the surface condition of the subgrade. The integrity of the underlying soil is the responsibility of the owner/earth work contractor.

Subgrade Preparation Recommendations

No geosynthetics will be placed on surfaces not previously found acceptable by the Agru America, Inc. supervisor or his agent.

No sharp stones or other hard objects that could penetrate the geosynthetics will be present in the top 1 inch (1") (2.5 cm) of the surfaces to be covered.

Surfaces to be lined shall be smooth and free of all rocks, sharp stones, sticks, roots, and sharp objects, or debris of any kind. The surface should provide a firm, unyielding foundation for the geosynthetic with no sudden, sharp or abrupt changes or break in grade.

1.2.A Geomembrane Placement

1.2.A.1 Installation Schedule

Field panels are placed only after the subgrade has been accepted by Agru America, Inc. and the Project Manager. Agru America, Inc. takes responsibility only for accepting the surface conditions of the subgrade.

Field panels are placed one at a time, and each field panel will be seamed immediately after its placement.

1.2.A.2 Location

Field panels are located by the Agru/America, Inc. Field Supervisor in a manner consistent with the specifications and in a manner best suited to existing site conditions (i.e., a field panel is a roll or a portion of roll cut in the field).

At the time of installation, the Agru America, Inc. Field Supervisor will give each field panel an "identification code" (alpha or alphanumeric). This identification code will be agreed upon by the Project Manager. This field panel identification code will be as simple and logical as possible.

Agru America, Inc. will record the identification code, roll number, and date of installation of each geomembrane field on the Daily Progress Report. Daily Progress Reports are to be submitted to project manager the day following production or as agreed upon prior to installation.

1.2.A.3 Field Panel Identification

A field panel is the unit area of geomembrane that is to be seamed in the field.

At the time of installation, Agru America Inc.'s Supervisor will give each field panel an "identification code" (alpha or alphanumeric). This identification code will be agreed upon by the Project Manager. This field panel identification code will be as simple and logical as possible.

Agru America, Inc. will record the identification code, roll number, and date of installation of each geomembrane field on the Daily Progress Report. Daily Progress Reports are to be submitted to project manager the day following production or as agreed upon prior to installation.

1.2.A.4 Weather Conditions

Neither welding nor placement of geomembrane will take place during any precipitation, in the presence of excessive moisture, blowing dust, in the presence of high winds, or in areas of standing water, unless necessary precautions can be taken.

1.2.A.5 Method of Placement

Agru America, Inc. will verify the following:

◊ Any equipment used does not damage the geomembrane by handling, trafficking, excessive heat, or other means;

◊ The prepared surface underlying the geomembrane has not deteriorated since previous acceptance and is still acceptable immediately before geosynthetic placement;

◊ Construction equipment used to deploy geomembrane should not create excessive rutting in the subgrade;

◊ The method used to place the panels minimizes wrinkles (especially differential wrinkles between adjacent panels);

◊ If the substrata is a geosynthetic material, deployment may be by hand, by use of small jack lifts on pneumatic tires having low ground contact pressure, or by use of all-terrain vehicles (ATV's) having low ground contact pressure;

◊ Any geosynthetic elements immediately underlying the geomembrane are clean and free of debris;

◊ No personnel working on the geomembrane will smoke, wear damaging shoes, or engage in other activities that could damage the geomembrane;

◊ The method used to unroll the panels does not cause scratches or crimps in the geomembrane and does not damage the supporting soil;

◊ Adequate temporary loading and/or anchoring (e.g., sand bags, tires), not likely to damage the geomembrane, has been placed to prevent uplift by wind (in case of high winds, continuous loading, e.g., by adjacent sand bags, or soil is recommended along edges of panels to minimize risk of wind flow under the panels);

◊ Direct contact with the geomembrane is minimized; i.e., the geosynthetic(s) are protected by geotextiles, extra geomembrane, or other suitable materials in areas where excessive traffic may be expected;

◊ In the case of high density conductive geomembrane, the electrically conductive layer should be placed conductive side down, and;

◊ Agru America, Inc. shall inform the Project Manager if the above conditions are not fulfilled.

1.2.A.6 Damage

Agru America, Inc. will inspect each geosynthetic after placement and geomembrane prior to seaming for damage. Agru America, Inc. will advise the Project Manager which panel or portions of panels should be repaired as required. Damaged panels or portions of damaged panels that have been rejected will be marked and their removal from the work area recorded by Agru America, Inc. Repairs to geomembrane will be made according to procedures described in Section 1.4.A.2.

1.2.B Geotextile and Geonet Placement

Geotextile and geonets will be handled in such a manner as to ensure they are not damaged in any way.

On slopes, geotextiles and geonets will be anchored in the anchor trench; then rolled down the slope in such a manner as to continually keep the material in tension.

In the presence of wind, the materials will be weighted with sandbags until final covers are installed.

Care will be taken to assure that any underlying layers are not damaged during placement of geotextiles and geonets.

Care will be taken to assure that stones, mud and dirt and not entrapped in the geotextile and geonet during placement and seaming operations.

Cutting and trimming of product placed on top of the liner must be done with hooked blade knives.

1.2.C Geosynthetic Clay Liner (GCL) Placement

The geosynthetic clay liner must be installed in general accordance with the manufacturer's specification and in such a way as to prevent any damage to the GCL.

One method of installing a GCL is to utilize a piece of equipment such as a front-end loader or forklift that is capable of lifting the GCL. A spreader bar is attached to the lifting equipment, and a core bar is installed through the GCL core. Straps or other types of attachments are looped over the core bar and the spreader bar. The equipment then lifts the GCL above the subgrade soils and while backing away from the initial starting point unrolls the GCL roll. This method can be used to install a membrane-backed GCL with the bentonite side up or side down.

For GCL's with a geomembrane backing, an alternate method for installing the GCL with the membrane facing against the soil is to attach a ten foot (10') 3m) long bar clamp to the end of the roll. The upper clamp has a chain attachment that can easily fit over a trailer hitch that is on a truck or other type of equipment. The GCL is then pulled across the subgrade soils. If the membrane is textured, then rub sheets should be used.

Folds in the GCL must be "stretched out" prior to installation of any overlying geosynthetics or soils. If these folds cannot be removed by realignment of the GCL, then these folds must be "cut" from the GCL and patched according to the manufacturer's specifications.

1.3 Geosynthetic Seaming and Joining

1.3.A Geomembrane Seaming

See Section 2.0 for more guidance.

1.3.A.1 Seam Layout

Seams will be made by overlapping adjacent sheets approximately three inches (3") (7.5 cm) for extrusion welding and approximately four to six inches (4"-6") (10 cm-15cm) for fusion welding.

In general, seams should be oriented parallel to the line of maximum slope; i.e., oriented along and not across, the slope. For corners and odd-shaped geometric locations, the number of seams should be minimized.

A seam numbering system compatible with a panel numbering system will be agreed upon at the Pre-Construction Meeting.

1.3.A.2 Seaming Equipment and Products

The approved processes for field seaming are extrusion welding and fusion (hot wedge) welding. Proposed alternate processes shall be documented and submitted to the Owner or his representative for approval.

The extrusion welding apparatus shall be equipped with gauges giving the temperature of the apparatus.

The fusion-welding apparatus must be an automated device that produces a double seam with an enclosed space or solid seam on thin mil material as specified.

The fusion welding apparatus shall be equipped with gauges giving the applicable temperature and speed settings.

Agru America, Inc. shall verify that:

◊ Equipment used for seaming is not likely to damage geomembrane;

◊ The extrusion welder is purged prior to beginning a seam until all heat-degraded extrudate has been removed from the barrel;

◊ The electric generator, if utilized, is placed on a smooth base such that no damage occurs to the geomembrane;

◊ Buffing the geomembrane to remove waxes and oxides will be completed no more than one (1) hour prior to extrusion welding (buffing is not necessary for hot wedge welding).

1.3.A.3 Seam Preparation

Agru America, Inc. shall verify that:

◊ Prior to seaming, the area is clean and free of moisture, dust, dirt, and foreign material of any kind;

◊ Seams are aligned with the fewest possible number of wrinkles and "fishmouths".

1.3.A.4 Weather Conditions for Seaming

The high temperature limit for welding is based on two factors:

(1) The well being of the crew. Black lining material will get very hot when exposed to sunlight. It is possible that the elevated sheet temperature in conjunction with immoderate ambient conditions could place the well being of the crew at risk.

(2) Material Capability. The highest temperature at which the materials can be properly welded is dependent upon such things as ambient temperature, wind, subgrade conditions, exposure to sunlight, material type, and material thickness to name a few.

Thinner materials and low-density products are the most difficult to seam at high liner temperatures. The problem typically is characterized by frequent burnouts (places in the weld where the rollers lose traction and the machine stops moving causing the wedge to burn through the liner). The number of burnouts can often be reduced by increasing the speed and/or decreasing the wedge temperature until a quality weld with a minimum number of burnouts is attained. The sheet temperature may reach a point at which the supervisor determines there are an excessive number of burnouts at which time the supervisor will order welding to stop.

In some areas of extreme temperature conditions, the supervisor may determine it would be more advantageous to work at night under artificial light, or split the workday to utilize the cooler morning and late evening hours.

The lowest allowable temperature at which welding may be permitted is also dependent upon conditions such as ambient temperature, wind, subgrade conditions, exposure to sunlight, material type, and material thickness. Typically cold weather welding may proceed by reducing welding speeds and/or increasing wedge temperature. Pre-heating the sheet in advance of the welding apparatus may also be done by using a hot air blower.

Whenever temperatures become cold, increased attention should be given to pre-weld destructive samples (Section 1.3.A.5). In cold conditions it is even more critical that these trial welds be performed under the same conditions that will be seen during actual seaming.

The lowest temperature at which welding may take place is the lowest temperature at which consistent passing trial seams can be performed under actual seaming conditions. In order to obtain passing results, it may be necessary to preheat the sheet in advance of the welder and/or shield the welding apparatus and the seaming area from wind.

In all cases, the geomembrane will be dry and protected from the wind.

Agru America, Inc. will verify that these adjustments for various weather conditions are fulfilled and will advise the Project Manager if they are not. The Project Manager will then decide if the installation will be stopped or postponed.

1.3.A.5 Trial Seams

Trial seams shall be made on fragment pieces of geomembrane liner to verify that the seaming equipment and conditions are adequate. Such trial seams will be made at the beginning of each seaming period (start of day, midday, and anytime equipment is turned off and allowed to cool down) for each seaming apparatus used. Trial seams shall be made under the same conditions as actual seams.

The trial seam sample shall be approximately three feet (3'/1.0m) long by one foot (1'/0.3m) wide for extrusion and six feet (6'/2.0m) long by one foot (1'/0.3m) wide for fusion welds with the seam centered lengthwise. Seam overlap shall be nominally three inches (3"/7.5cm) for extrusion welds and four to six inches (4"-6"/10cm-15cm) for fusion welds.

Two adjoining specimens each one inch (1"/2.5cm) wide, will be cut from the trial seam sample by the installer. The specimens will be tested respectively in shear and peel using a field tensiometer, and they should not fail in the seam. If a specimen fails, the entire operation will be repeated. If the additional specimen fails, the seaming apparatus and procedures will not be accepted and will not be used for seaming until the deficiencies are corrected and two consecutive successful full trial welds are achieved.

1.3.A.6 General Seaming Procedure

Unless otherwise specified, the general seaming procedure used by Agru America, Inc. shall be as follows:

◊ The rolls of membrane will be overlapped by approximately four to six inches (4"-6"/10cm-15cm) for fusion welding and three inches (3"/7.5cm) for extrusion welding. Seaming strength is not a function of the overlap. The overlap simply needs to be wide enough to weld and test properly.

◊ "Fishmouths" or wrinkles at the seam overlaps will be cut along the ridge of the wrinkle in order to achieve a flat overlap. The cut "fishmouths" or wrinkles will be seamed and any portion where the overlap is inadequate will be repaired in accordance with the repair procedures described in Section 1.4.A.2.

◊ Seaming will extend up the panels and well into the anchor trench.

◊ For fusion welding on damp or muddy subgrade, a movable protective layer of plastic may be required to be placed directly below the overlapped membranes being seamed. This is to prevent any moisture buildup between the sheets to be welded and/or to provide a more stable base on which the fusion welding device can travel.

1.3.A.7 Non-destructive Seam Continuity Testing

1.3.A.7.1 Concept

Agru America, Inc. will non-destructive test all field seams over their full length using a vacuum test unit, air pressure testing, or other approved method where applicable. The purpose of non-destructive tests are to check the seams for leaks. It does not provide information on seam strength or quality of bonding. Non-destructive testing will be carried out as the seaming progresses, not at the completion of a job.

1.3.A.7.2 Vacuum Testing

The equipment will be comprised of the following:

◊ A vacuum box assembly consisting of a rigid housing, a transparent viewing window, a soft neoprene gasket attached to the bottom, port hole or valve assembly, and a gauge to indicate chamber vacuum;

◊ A rubber pressure/vacuum hose with fittings and connectors;

◊ A bucket and wide brush, mop or spray assembly;

◊ A soapy solution;

The following procedures shall be followed:

◊ Energize the vacuum pump;

◊ Wet a strip of geomembrane approximately twelve by 48 inches (12 x 48"/0.3m x 1.2m) with the soapy solution;

◊ Place the box over the wetted area;

◊ Close the bleed valve and open the vacuum valve;

◊ Ensure that a leak tight seal is created;

◊ For a period of approximately five to ten (5-10) seconds, examine the geomembrane through the viewing window for the propagation of soap bubbles;

◊ After five to ten (5-10) seconds, close the vacuum valve and open the bleed valve, move the box over the adjoining area with a minimum three inches (3"/7.5cm) overlap, and repeat the process;

◊ All areas where soap bubbles appear will be marked and repaired in accordance with Section 1.4.A, and;

◊ Vacuum tested seams are recorded on Daily Progress Reports.

1.3.A.7.3 Air Pressure Testing (For Double Fusion Seam Only)

The equipment shall be comprised of the following:

◊ An air pump (manual or motor driven) equipped with pressure gauge capable of generating and sustaining a pressure between 25 and 30 psi (160 and 200 kPa);

◊ A rubber hose with fittings and connections; and

◊ A hollow needle and clamp assembly shown in Figure 2.2, Section 2.1.F or other approved pressure feed device.

The following procedures will be followed:

◊ Seal both ends of the seam to be tested;

◊ Insert needle or other approved pressure feed device into the tunnel created by the fusion weld;

◊ Energize the air pump to a pressure between 20 and 30 psi (160 and 200 kPa), close valve, and hold pressure for approximately five minutes;

◊ If loss of pressure exceeds the values listed below, or does not stabilize, locate faulty area and repair in accordance with Section 1.4.A;

◊ Release air pressure by puncturing seam to assure there is no blockage in the air channel and verify that the full seam has been pressurized;

◊ Remove needle or other approved pressure feed device and seal, and;

◊ Pressure tested seams are recorded on Daily Progress Reports.

Table 1
PRESSURE TEST SPECIFICATION FOR DUAL TRACK FUSION WELDS IN HDPE AND LLDPE
Test Pressure (After 5 minutes) PSI (kPa)

Sheet Thickness Allowed	Minimum	Pressure Maximum	Drop
30 mil (0.75mm) (28 kPa)	15 (166)	20 (276)	4 PSI
40 mil (1.0mm) (28 kPa)	20 (166)	30 (276)	4 PSI
60 mil (1.5mm) (28 kPa)	24 (166)	30 (276)	4 PSI
80 mil (2.0mm) (28 kPa)	24 (166)	30 (276)	4 PSI
100 mil (2.5mm) & thicker (28 kPa)	24 (166)	30 (276)	4 PSI

1.3.A.8 Destructive Testing

1.3.A.8.1 Introduction

Destructive testing of seams is important because it provides direct evaluation of seam strength and bonding efficiency which indicates seam durability.

Destructive testing involves two techniques:

1. Shear Testing – Applies a tensile stress from the top sheet through the weld and into the bottom sheet and;

2. Peel Testing – Peels the top sheet back against the overlapped edge of the bottom sheet in order to observe how separation occurs. The peel test indicates whether or not the sheets are continuously and homogeneously connected through the seam.

1.3.A.8.2 Location and Frequency

Destructive seam tests will be performed at random selected locations. The owner and/or owners' representative will select locations where destructive samples will be cut.

A frequency will be agreed upon by Agru America, Inc. and the Project Manager at the Pre-Construction Meeting. Unless otherwise specified, destructive samples should be pulled at intervals of one (1) sample for every 500 linear feet of weld.

The seaming technician will not be informed in advance of the locations where the seam samples will be taken.

1.3.A.8.3 Sampling Procedure

Samples will be cut by Agru America, Inc. as the seaming progresses. When cutting samples above an existing geomembrane, hook blade knives should be used.

A number will be assigned to each sample which is to be based upon seam and sample number and mark it accordingly.

Destructive sample locations will be recorded on a daily report and on the as-build drawing; and

All holes in the geomembrane resulting from destructive seam sampling will be immediately repaired in accordance with repair procedures described in Section 1.4.A.

1.3.A.8.4 Size of Samples

At a given sampling location, two (2) coupons for field testing should be taken. Each of the coupons will be one inch (1"/2.5 cm) wide by twelve inches (12"/0.3m) long with the seam centered parallel to the length. The distance between these two (2) coupons will be twelve inches (12"/0.3m).

If both coupons pass the field test described in Section 1.3.A.9.5, a sample will be cut between the two (2) coupons. The sample will be cut into three (3) parts and distributed as follows:

- ◊ Two (2) one inch (1"/2.5 cm) wide strips will be tested in the field for peel and shear and will not fail in the seam. If seam strengths are being evaluated, samples should be cut with a die to provide proper geometry.

- ◊ If any field test samples fails to pass, then the procedures outlined in Section 1.3.A.9.6 will be followed.

- ◊ If the initial sample coupon test passes with Film Tear Bond (FTB) (see Figures 2.5 and 2.5 in Section 2.0), the sample is considered passing unless by specification, requires further testing to obtain quantitative results per Table 3. If it fails, the seam should be repaired in accordance with Section 1.4.A.

1.3.A.8.5

Electric or hand tensiometer destructive testing is to be carried out in the field. Testing procedure is as follows:

◊ Two (2) one inch (1"/2.5 cm) wide strips will be tested in the field for peel and shear and will not fail in the seam. If seam strengths are being evaluated, samples should be cut with a die to provide proper geometry.

◊ If any field test samples fail to pass, then the procedures outlined in Section 1.3.A.9.6 will be followed.

◊ If the initial sample coupon test passes with Film Tear Bond (FTB) (See Figures 2.5 and 2.6 in Section 2.0), the sample is considered passing unless by specification, requires further testing to obtain quantitative results per Table 3. If it fails, the seam should be repaired in accordance with Section 1.4.A.

Table 2
Seam Strength Requirements are according to GRI -GM19.
(See www.geosynthetic-institute.org/grispecs/gm19.pdf)

1.3.A.8.6 Procedures for Destructive Test Failure

The following procedures will apply whenever a sample fails a destructive test. Agru America, Inc. has two options:

1. Reconstruct the seam between any two passed test locations.

2. Trace the welding path to an intermediate location ten feet (10'/3m) minimum from the point of the failed test in each direction and take a small sample coupon for an additional field test at each location. If these additional samples pass the field test, then full samples are taken. If these samples pass the tests, then the seam is reconstructed between these locations. If either sample fails, then the process is repeated to establish the zone in which the seam should be reconstructed.

All acceptable seams must be bounded by two (2) locations from which samples passing destructive tests have been taken or entire seam is capped.

Agru America, Inc. will document all actions taken in conjunction with destructive test failures; e.g., capping of failed seam area.

1.3.B Geotextiles, Geonets, and Geocomposite Joining

1.3.B.1 Geotextiles

Geotextiles may be installed by overlapping, by thermally bonding on a spot or continuous basis, or by sewing as specifications dictate.

If sewing is required, the thread used will be a polymeric material with chemical resistance similar to the geotextile.

1.3.B.2 Geonets

Geonets may be butt joined or lapped if specified. Nylon/plastic cable ties will be applied to the net edge at five foot (5'/1.5m) intervals along the edge.

End splices will be made as follows:

1. On slopes, the ends will overlap two feet (2'/0.6m) with uphill panels on top and two (2) rows of cable ties applied.

2. In flat areas, the ends will overlap a minimum to two inches (2"/5 cm) and one (1) row of three (3) cable ties applied.

1.3.B.3 Geocomposites

Geocomposites can be overlapped with the net portion tied and the geotextile portion thermally bonded or seamed as required by the project specifications.

1.3.C. Geosynthetic Clay Liner (GCL) Joining

Seaming of GCL's is achieved by simply overlapping the GCL panels. Care must be taken in order to determine if any loose bentonite should be spread between the overlap.

Alternately, the geomembrane backing can be welded in accordance with the membrane and GCL manufacturer specifications.

1.4 Geosynthetic Repair Procedures

1.4.ADefects and Repairs of Geomembrane

1.4.A.1 Identification

All seams and non-seam areas of the geomembrane will be examined by Agru America, Inc. for identification of defects, holes, blisters, undispersed raw materials and any sign of contamination by foreign matter.

Defective/damaged materials will be identified via a deficiency report, either separately or on the Daily Report. Actions taken to resolve or correct the problem will also be recorded on the similar form.

Defects, holes, blisters, undispersed raw materials, signs of contamination by foreign matter, unacceptable welds in geomembranes and other unsatisfactory conditions will be identified. The repair/corrective action to repair the problem will also be recorded.

1.4.A.2 Repair Procedures

Any portion of the geomembrane failing a destructive test will be repaired. Several procedures exist for the repair of these areas. The final decision as to the appropriate repair procedure will be agreed upon between the Project Manager and Agru America, Inc.

The procedures available include:

◊ Patching – Used to repair holes, tears, and contamination by foreign matter;

◊ Buffing and re-welding – Used to repair small sections of extruded seams;

◊ Spot welding or seaming – Used to repair pinholes, or other minor localized flaws;

◊ Capping – Used to repair large lengths of failed seams; and

◊ Topping – Used to repair areas of inadequate seams which have an exposed edge.

In addition, the following provisions will be satisfied:

Surfaces of the geomembrane which are to be repaired will be abraded no more than one (1) hour prior to the repair;

All surfaces must be clean and dry at the time of the repair;

All seaming equipment used in repairing procedures must be approved;

Patches or caps shall extend beyond the edge of the defect, and all corners of patches will be rounded with a radius.

1.4.A.3 Repair – Non-destructive Testing

Each repair will be non-destructively tested using the methods described in Section 1.3.A.7.2 as appropriate. Repairs which pass the non-destructive test will be taken as an indication of an adequate repair. Failed tests indicate that the repair will be redone and re-tested until a passing test result is obtained.

1.4.B Geotextile, Geonets, and Geocomposite Repairs

Any holes, tears, or burn throughs from thermal seaming in geotextiles will be repaired by patching with the same geotextiles. The patch will be a minimum of twelve inches (12"/30cm) larger in all directions than the area to be repaired and will be spot bonded thermally.

Any holes or tears in geonets will be repaired by patching with the same geonet. The patch will be a minimum of twelve inches (12"/30cm) larger in all directions than the area to be repaired. The patch will be tied in place using a minimum of four (4) nylon cable ties.

1.4.CGeosynthetic Clay Liner (GCL) Repair Procedures)

GCLs will be inspected for cuts, tears, or areas of bentonite loss.

The area to be repaired (patched) must be free of contamination by foreign matter. Patches must have a twelve inch (12"/30cm) overlap around the damaged area. For fabric-encased GCLs the patch is to be tucked into place with excess bentonite poured over the overlap.

1.5 Backfilling of Anchor Trench

The anchor trench, if any, will be adequately drained by Owner/Earthwork Contractor to prevent ponding or otherwise softening of the adjacent soils while the trench is open. The anchor trench will be backfilled by the Earthwork Contractor or as outlined in the specifications and bid documents.

Since backfilling the anchor trench can affect material bridging at toe of slope, consideration should be given to backfill the liner at its most contracted state; preferably during the cool of the morning or extended period of overcast skies. Care shall be taken when backfilling the trenches to prevent any damage to the geosynthetics.

1.6 Lining System Acceptance

The geosynthetic lining system will be accepted when:

◊ The installation of materials are deployed and welded; and

◊ Verification of the adequacy of all seams and repairs including associated testing is complete.

1.7 Soils in Contact with the Geomembrane

Important points for quality assurance of soils in contact with geomembranes include:

◊ A geotextile or other cushion approved by the designer may be installed between angular aggregate and the geomembrane;

◊ Equipment used for placing soil will not be driven directly on the geomembrane;

◊ A minimum thickness of one foot (1'/0.3m) of soil is recommended between a light dozer (such as a CAT D-3 or wide track caterpillar D-6 or lighter) and the geomembrane; and

◊ In areas of heavy traffic such as access ramps, soil thickness should be at least two to three feet (2-3'/0.6-0.9m).

<u>Soil/Earth Cover on Top of Geomembrane</u>

Placement of soil (sand or other types of earth) cover on top of the liner will not be performed until all destructive and non-destructive testing has been performed and accepted.

Placement should be performed to minimize wrinkles. Equipment operators should be briefed on method and timing of soil placement to deal with the affects of thermal expansion and contraction of the liner. Soil placement during cooler part of the day minimizes wrinkle problems.

Material placed on top of the liner should be back-dumped on liner and, in order to avoid the formation of wrinkles, efforts should be made to load the soil so that it comes down on top of the liner rather than being pushed across the sheet. This is done by:

1. Using a front-end loader to place soil ahead of spreading soil cover; and

2. Spreading soil by building a mound at the edge of soil, then pushing soil up and over the mound causing it to come down on the liner.

If a wrinkle forms, every effort should be made to walk the wrinkle out.

Minor folding over of wrinkles is acceptable providing an even transition occurs at the tail of the wrinkle. If excessive stress points are created at the tail of the wrinkle, the wrinkle should be cut out and repaired per Section 1.4.A.

2.0 WELDING SYSTEM DETAILS

2.1 Details of Fusion Welding System

2.1.A. Introduction

The fusion welding system is the primary seaming system for geomembrane installation and the extrusion welding system is utilized for repairs and detail work.

The fusion welding apparatus is self-propelled and produces a double seam with an enclosed air channel for testing. A single wedge may be made available for very thin materials on special request (certain lead times in obtaining this equipment may apply).

The wedge itself contains two cartridge style heaters and its temperature is controlled by a closed loop feedback controller using a thermocouple positioned in the wedge. This maintains the wedge temperature typically to within ± ten degrees Centigrade (10° C) of the setpoint temperature during welding.

In addition to these electronic devices, a great deal of care has been taken to assure that the mechanical design is as self-adjusting and trouble free as possible. The wedge for example is free floating and pivots about the same axis as the drive rollers. This means that no wedge position adjustments must be made for welding materials of different thickness. Also, the drive system consists of totally enclosed gears, chains, and shafts which need no adjustments and are protected from the environment.

2.1.B Geomembrane Preparation

◊ Correct performance of the welder requires that the geomembrane be brought to its exact plan position for final installation and seaming.

◊ The two (2) geomembrane panels to be joined must be properly positioned such that approximately four to six inches (4-6"/10-15 cm) of overlap exists.

◊ If the overlap is insufficient, lift up the panel to allow air beneath it and "float" it into proper position. Avoid dragging sheets, particularly when they are on rough soil subgrades.

◊ There should be no excessive undulations (waves) along the seams during the seaming operation. When excessive undulations are present they often lead to the undesirable formation of "fishmouths" which must be trimmed, laid flat, and reseamed via a patch.

◊ There will generally be slack in the geomembrane depending on the ambient temperature, length of exposure time, etc.

◊ The sheets which are overlapped for seaming must be clean.

◊ The sheets which are overlapped for seaming must be free of moisture in the area of the seam.

◊ Seaming is not allowed during rain or snow, unless the seam is covered with an enclosure.

◊ The soil beneath the geomembranes should not be frozen. The heat of seaming can thaw the frost allowing water to be drawn into the region to be joined. Seaming over frozen soil, however, can be accomplished with rub sheets of geomembrane directly under seam edges.

◊ Ambient temperatures for seaming should be above freezing i.e. thirty-two degrees Fahrenheit (32° F/0°C). However heat seaming below thirty-two degrees Fahrenheit (32°F/0°C) can proceed with caution as stated in the next item and in Section 1.3.A.4.

◊ For cold weather seaming, it may be advisable to preheat the sheets with a hot air blower, to use a shield of some sort to prevent heat losses during seaming, and to prepare more test welds in order to determine appropriate seaming conditions (e.g. equipment temperatures should be set higher and seaming rates slowed down during cold weather seaming). For further guidance see Section 1.3.A.4.

2.1.C Equipment Preparation

◊ A working and properly functioning power source must be available within close proximity of the seaming region. If a generator is utilized, rubber tires must be used, or a smooth plate placed under the generator such that it is completely stable so that no damage can occur to the geomembrane. Fuel (gasoline or diesel) for the generator should be stored off the geomembrane.

- ◊ As the fusion method is one of melting the opposing surfaces of the two (2) geomembrane panels to be joined, no grinding of the geomembrane sheets is necessary, nor allowed.

- ◊ Tacking of the geomembrane panels, as done in extrudate fillet seaming, is not needed.

- ◊ The wedge itself should be inspected to see that it is uniform and reasonable tapered. Various types are currently available. Some are smooth surfaced while others have patterned ridges in the direction of the seam. The taper dimensions vary according to different types of machines. The major point for inspection is that no sharp edges should exist where geomembrane sheet surfaces must pass.

- ◊ Nip rollers for applying pressure on the sheets and driving the device (most often knurled rollers) follow the wedge. They should be inspected for sharp surfaces or excessive wear.

- ◊ For a dual, or split seam, the recessed space for the air track should be examined.

- ◊ As the geomembrane panels pass through the machine, they must properly come in contact with the wedge. Fusion welding machines are equipped with pressure shoes or rollers which assure contact between the sheet and the wedge as the material passes through the machine. Once the welding machine has been set up for a particular thickness, further field adjustments are not required.

- ◊ The front part of the seaming device should be inspected for sharp corners and irregular details which may damage the geomembrane.

- ◊ Temperature controllers on the fusion device should be checked periodically.

2.1.D Seaming Process

The fusion system is properly positioned for the making of a dual (split) seam.

The principle of fusion welding is that both surfaces to be fused come into intimate contact with the hot wedge, or anvil. The wedge lifts up both overlapped panels off the subgrade and fusion is brought about by compressing the two molten surfaces of the sheet together, causing an intermingling of the polymers.

Figure 2.1

- ◊ Temperature, speed, and nip force will vary according to the geomembrane thickness being installed.

- ◊ Ambient factors such as clouds, moisture, and hot sun may require the temperature and/or speed setting of the wedge to vary. A test strip should be run before welding begins, which will enable the operator to find the proper settings for the particular conditions that day. See Section 1.3.A.5.

◊ After placing the machine into the overlapped sheet of material, pick it up a few inches, loading the bottom sheet first, and then the top sheet between the wedge and respective pressure shoe/roller. When top and bottom sheets are loaded, engaging the nip rollers will secure the position of sheet and wedge and start the welding.

◊ It is necessary that the operator keep constant visual contact with the temperature controls, and the completed seam coming out of the machine. Occasional adjustments of speed may be necessary to maintain a consistent weld.

◊ Occasionally on some soils, the wedge tends to "bulldoze" into the ground as it travels. This causes soil to enter the weld making the seam weak and unacceptable. To overcome this, it is recommended that the operator take some of the weight off the front of the machine by lifting it slightly. Alternatively, some type of base for the machine to travel on could be provided. Strips of geotextile or geomembrane ("rub sheets") have proven effective to prevent this bulldozing effect.

2.1.E After Seaming

◊ A smooth insulating plate or heat insulating fabric is to be placed beneath the fusion welding apparatus after use.

◊ A slight amount of "squeeze-out" or "flashing" in the weld is a good indicator that the proper temperatures were achieved. Some melted polymer laterally extruded out of the seam zone indicates a proper seam.

◊ Nip/drive roller marks will always show on the surface and will be just barely evident to the touch.

◊ The fusion device requires only a few adjustments, but it is very important that they be checked daily. Cleaning of machine should be done frequently, and at least daily.

2.1.F Dual Track Fusion Air Pressure Testing

General

The automatic fusion seaming machine creates two distinct seams. These two seams are separated by a void or air space. This seam design is intentional for two reasons. First, it allows a very positive test for leak integrity, and second, the double weld seam offers both a primary and a secondary seal for the seam.

Air Pressure Test Procedure: (More Information in Section 1.3.A.7.3)

1. Seal one end of the seam by applying heat to the end of the seam, via hot air gun, until "flow temperature" is achieved.

2. Clamp off end using hand vise gripper or tape used for this purpose.

3. A pressure gauge/needle assembly is inserted into void or air channel.

4. Air pressure is then applied into the air channel with the use of an air pump per the following schedule:

Table 3
Initial Pressure Schedule

	Field Testing	
Material	Minimum PSI	Maximum PSI
30 mil	15	30
40 mil	20	30
60 mil	24	30
80 mil	24	30
100 mil	24	32

5. Pressure test seams according to the initial pressure test schedule. Hold test for five minutes. If no pressure drop is greater than the maximum allowable pressure drop the seam is judged leak free.

Table 4
Maximum Allowable Pressure Drop

Material	Field Test (after five minutes)
30 mil	4 PSI (28 kPa)
40 mil	4 PSI (28 kPa)
60 mil	4 PSI (28 kPa)
80 mil	4 PSI (28 kPa)
100 mil	4 PSI (28 kPa)

Note: At all times before heat sealing the end of the seam, the operator should insure that the void or air channel is free of obstruction.

6. On completion of the test, the air channel should be cut open. The pressure gauge reading should immediately drop to zero indicating that the air channel was continuous and unblocked.

FIELD SEAM FAILURE

Should failure occur through excessive leak down over the scheduled time period, check both ends of seam to insure proper seal and re-test. Should failure reoccur, check the top fusion seam by applying a constant flow of air pressure to void air channel. Mix a strong solution of liquid detergent and water and apply an ample amount to the top fusion weld. Any failure or leak will be indicated by continuous bubbles appearing.

If no failure appears in the top fusion seam area, check systematically by isolating random sections of the seam. This should be accomplished in 150 linear foot 45m) long sections of seam. Then re-test each section by pressure testing until the leak is located. Repair failed seam area by extrusion welding the outside edge of the top fusion weld between areas of failure. Then vacuum test repaired seam. All repairs in accordance with Section 1.4.A.

2.1.G. Peel Test for Fusion Seam Weld

For more information see Section 1.3.A.9

Procedure:

1. Cut specimen approximately one inch wide by approximately six inches long (1 x 6"/2.5 x 15cm).

2. Only one track is peeled apart in this destructive test. The other track is for the purpose of air pressure testing capabilities.

3. Clamp bottom tabs into the testing machine (Field or Lab Tensiometer). Turn on machine and pull the seam (See Figure 2.3).

4. All testing of destructive samples of fusion seam will be in accordance with ASTM D4437 which references ASTM 413 for peel.

Passing results for a seam are determined to be FTB per the chart titled, Destructive Testing of Dual Hot Wedge (See Figure 2.5).

Figure 2.3

2.2 Details of Extrusion Welding System

2.2.AIntroduction

The Fusion Welding System is the primary seaming system for geomembrane installation. The Extrusion Welding System is utilized for repairs and detail work. The Extrusion Welding System produces a seam quality equal to the Fusion Weld and has the advantage that all welds are applied on top of the geomembrane which allows its use at "T" intersections and in irregular seam areas such as pipe boots.

The extrusion welder will have two independent heating zones, each with its own closed loop temperature control system. These two zones are typically referred to as the nozzle and the extruder. The nozzle thermocouple is positioned approximately one inch (1"/2.5cm) from the end of the steel nozzle which rides on the sheet giving good control over the temperature of the molten polymer as it contacts the sheet. Some extrusion machines may only have one heating zone which is referred to as a shoe. This machine needs only one heater since there are no rotating tips.

The extruder and nozzle will be insulated to prevent excessive heat loss in cold and/or windy conditions as well as to provide a safe working environment for the operator.

When tested in peel the numerical values for weld strength of an extrusion weld will be slightly lower than for fusion welds. The lower value is the result of the weld bead on top of the liner changing the geometry of the load application in the tensile test and not an indication of inferior weld quality.

2.2.B Geomembrane Preparation

Geomembrane preparation is the same as described for the fusion weld, Section 2.1.B.

2.2.C Equipment Preparation

A working and properly functioning power source must be available within close proximity of the seaming region. If a generator is utilized rubber tires must be used, or a smooth plate placed under the generator such that it is completely stable so that no damage can occur to the geomembrane. Fuel (gasoline or diesel) for the generator should be stored off the geomembrane.

The extrusion welder is a completely self contained system which requires no adjustments after it has been initially set up for a particular geomembrane thickness.

An initial inspection of the extrusion welder should be made before it is heated to confirm that the electrical cords, insulation and covers are in good condition and that the welding nozzle is correct for the geomembrane to be seamed.

The welding machine should be connected to a proper power supply and heated to the correct welding temperature for the geomembrane to be seamed.

After the unit has reached correct operating temperature, clean, dry welding rod should be inserted and the unit operated for several minutes to confirm that the temperature controllers are operating properly and that the welding rod feed system is operating properly.

The Teflon shoe(s) should be checked for excessive wear and replaced if necessary and they must be trimmed for proper control of the weld bead configuration

2.2.D Seaming Process

Geomembrane to be extrusion welded must have low molecular weight polymer (waxes) and surface oxidation removed by lightly grinding the weld surface. The grinding is performed parallel to the seam and controlled such that grinding marks do not extend more than 0.25 inches (6mm) outside the area of the weld bead. Grinding should precede the actual welding as closely as possible but in no case should grinding precede welding by more than one hour. 80 mil (1.5mm) or thicker geomembranes should have the edge of the top sheet beveled by grinding to approximately a 45° angle.

The geomembrane to be extrusion welded must be temporarily bonded to hold the material in place until the extrusion weld bead cools and attains full strength. Automatic or hand-held hot air tack welds are therefore applied prior to extrusion welding.

The extrusion welder barrel should be purged of all degraded polymer prior to the start of seaming.

The welding operation should be observed to assure that the weld bead is centered over the edge of the top overlapped sheet and that weld bead appearance is smooth and uniform.

All extrusion welds should be non-destructively tested by vacuum testing as described in Section 1.3.A.7.2.

Destructive tests, per 1.3.A.9 and Figures 2.4 and 2.6 are conducted when seam lengths are adequate.

REFERENCES

1. Mature, Inc., "Lining of Waste Containment and Other Impoundment Facilities", EPA/600/2-88/052, Sept. 1988.

2. ---, "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities", EPA,530-SW-86-031, Oct. 1986.

3. Haxo, H.E., Jr., "Quality Assurance of Geomembranes Used as Linings for Hazardous Waste Containment", Jour. Geotex and Geomemb., Vol. 3, No. 4, 1986, pp. 225-248.

4. Rosen, S. L., Fundamental Principles of Polymer Materials, J. Wiley and Sons, Inc., New York, 1982.

5. Koerner, G.R. and Bove, JA., "Construction Quality Assurance of HDPE Geomembrane Installations, Proc. Geosynthetics '89, San Diego, CA, IFAI, pp. 70-83.

6. Koerner, R.M., Designing with Geosynthetics. 2nd Edition, Prentice Hall Publ. Co., Englewood Cliffs, NJ, 1990.

7. Struve, Fred, "Consistent Wedge Welders", Proc. 7th GRI Seminar, Dec. 14-15 1993, Philadelphia, PAA., pp. 9-23.

Landsaver Environmental's Installation Procedures Manual

Ambient Temperature
Geomembrane shall not be welded when ambient temperatures are below 32 °F (0 °C) or above 104 °F (40 °C) unless the Landsaver Environmental can demonstrate through trial welds that the seam quality is not compromised.

Control of Panel Uplift by Wind
Landsaver Environmental will use sandbags as ballast to keep liner from moving due to wind. Sandbags will be placed around all exposed edges of Geomembrane.

Acceptable Condition of Subsurface Beneath the Geomembrane
Geomembrane shall not be placed upon standing water or other conditions, which will result in deterioration of the Subgrade.
Landsaver Environmental shall remove any materials placed to protect the Subgrade prior to placement of the Geomembrane liner.

Quality & Consistency of Welding Material
To be determined by the manufacturer, prior to shipping, in conjunction with project specifications and third party engineer. A visual inspection will be made by Landsaver Environmental prior to and after deployment of material. Any inconsistent areas with undispersed raw material or visibly damaged will be repaired at no additional cost to the owner.

Proper Preparation of Liner Surfaces to be joined
Liner surfaces to be joined must be clean and dry before welding. In imperfect welding conditions where welding must be done, Landsaver Environmental will use paper towels to clean and/or dry the surfaces to be joined prior to actually welding them.

Cleanliness of the Seam Interface (airborne dust & debris present)
Surfaces to be welded shall be clean and dry at the time of welding.
General contractor shall be responsible for dust control. If too much dust is present, as determined by Landsaver Environmental's installation supervisor in conjunction with third party construction quality assurance (if any), then Landsaver Environmental will cease installation until the situation is remedied.

Installation Methods
Geomembrane liners shall be welded continuously without fish mouths or breaks in the weld. Where fish mouths are unavoidable, the Geomembrane sheet shall be slit to a point such that the sheet lies flat and with no remaining wrinkle. The two edges of the slit shall be welded together provided tat the overlap for this weld shall be a minimum of 3 inches. Areas of the slit, which do not achieve an overlap of 3 inches, including the terminus of the slit, shall be provided with a patch as discussed below.

Defects in and damage to Geomembrane sheets shall be repaired by welding a patch over the defect using extrusion-welding equipment. The patch material shall consist of an undamaged piece of Geomembrane cut to provide a minimum of 3 inches of overlap in all directions from the defect. Torn or permanently twisted Geomembrane shall be replaced at no expense to the owner.

Personnel walking on the geosynthetic shall not engage in activities or wear types of shoes that could damage the geosynthetic. The use of soft-soled shoes by everyone walking on the liner is recommended by Landsaver Environmental. Smoking shall not be permitted while working on the Geomembrane.

Vehicular traffic directly on the geosynthetic shall not be permitted. Equipment shall not damage the geosynthetic materials by handling, trafficking, leakage of hydrocarbons, or any other means. The unprotected Geomembrane surface shall not be used as a work area, for preparing patches, storing tools and supplies, or other uses. Low ground pressure ATV's will be permitted to drive on the Subgrade and the Geomembrane for assistance in deploying materials and moving sandbags.

Geomembrane liner shall be handled and placed in a manner, which minimizes wrinkles, scratches, and crimps. Adjacent rolls of Geomembrane shall overlap a minimum of 4 inches for fusion welding and 3 inches for extrusion welding.

Electric generators will be placed on top the Geomembrane layer with a scrap piece of Geomembrane below to reduce the chance of causing damage to the Geomembrane.

Geomembrane liner shall be installed in accordance with Landsaver Environmental's approved panel layout drawing. This drawing is subject to change by the installation supervisor at the time of construction.

<u>Documentation</u>

The following documentation will be maintained by Landsaver Environmental at the project site:

- Daily Log: a daily record that summarizes the panels deployed, seams completed, seam testing, seam and panel repair, personnel on site, and equipment on site.
- Panel Layout: provides Geomembrane roll number used and Subgrade acceptance for each panel deployed
- Seam Testing Log: provides a complete record of all nondestructive and destructive seam tests performed as part of Landsaver Environmental's quality control program
- As-built drawing: Maintain an as-built drawing updated on a weekly basis. This as-built drawing may be kept in field notebooks until project completion.

Complete Description of Seaming by Extrusion Welding & Hot-wedge Welding

Geomembrane liners shall be welded using either extrusion or radiant wedge welding equipment. Test seams shall be made upon each start of work for reach seaming crew, upon every four hours of continuous seaming, every time seaming equipment is changed, or if significant changes in Geomembrane temperature and weather conditions are observed. These test welds shall be tested using daily record that summarizes panels deployed, seams completed, seam testing, seam repair, personnel on site, and equipment on site using field tensiometer and, at a minimum, exhibit the required seam strength.

Wedge Welding will be used as the primary method of seaming. Wedge welding is done by an automated device that heats the Geomembrane edge, squeezes the two layers, and fuses the seam together. This device has a display gauge that monitors the temperature of the heating device (wedge).

Extrusion Welding is an alternate method of seaming, and is used for welding patches, around appurtenances, and any other place where a wedge welder cannot weld. Extrusion welding is done by tacking the two layers in place with a hot air weld, grinding approximately 10% of the thickness of the Geomembrane off in the area to be extruded, and running a bead of extrudate along the length of the seam. Grinding must not be done more than one hour prior to the extrusion weld. The extrusion welder has a display gauge that monitors the temperature of the heating device (barrel).

Warranty

An installation warranty will be provided by Landsaver Environmental for a period of one year from the date of acceptance of the Geomembrane liner.

Precautions for Construction Subsequent to Installation

Avoid dropping anything on the liner including cover material. No vehicular traffic should be allowed directly on top of the liner.

Backfilling of anchor trench should be completed prior to cover operation. Cover operation should be conducted by stock piling material at the edge of the pond and pushing it out over the liner creating a ramp to the bottom of the pond. A minimum of 12 inches of cover soil must be maintained between the liner and the equipment placing the cover material. This depth should be increased to 36 inched in the ramp area and 24 inches for haul roads.

After a ramp is placed the bottom of the pond should be covered first. Once the bottom is covered the sides should be covered from the bottom up. Cover material should be placed so that wrinkles are minimized. Covering during the coolest part of the day will help minimize wrinkles from thermal expansion. At no time should the material be allowed to fold over itself, as this will damage the liner.

Do not use metal shovels, rakes, etc. on the liner. If hand tools must be used it is recommended they be plastic. If work is to be done directly on top of the liner, workers should wear smooth soled shoes that will not trap large stones in the treads and possibly puncture the liner as they walk.

If concrete work is to be placed on top of the liner a protective layer of heavy weight geotextile should be placed between the liner and the concrete to protect the liner from aggregate while the concrete is being placed and finished.

No hot work should be permitted directly on top of the liner.

It is not recommended to use stakes in the cover material over the liner. Extreme caution must be used when using hand tools or driving stakes on top of the liner to ensure the liner is not penetrated.

agru america

Technology in Plastics

Landsaver Environmental

Landsaver Environmental (Landsaver) is a well-established lining installation company within the Geosynthetic Industry. Landsaver is one of the largest installers of Agru America, Inc.'s products in the Southeast region and one of our top installers in the United States.

Agru America, Inc. has worked successfully with Landsaver over the years on multiple projects where Landsaver has installed over 5,000,000 square feet of HDPE and LLDPE Smooth/Microspike material. Landsaver is familiar with approved installation procedures and we have recognized them as one of our top-tier "Priority Installers".

Agru America, Inc. does not warrant or guarantee the work of any Approved Installer. Approved installers are independent contractors that provide specific installation services and do not act as agents or representatives of Agru America, Inc.

Paul W. Barker
Technical Director
Agru America, Inc.

Date: March 8, 2007

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2007- Present

Job Name & Location	Material:		Qty:	Unit:
BASF Repair 3340 West Norfolk Road, Portsmouth VA 23703	Repair			
Southern Nash Middle School 5301 South N.C. 581, Spring Hope NC 27882	30 Mil HDPE Smooth Batten AL 12' OC Pipe Boots		6,253 380 4	SF LF Each
Rowe Pond 206 Pullets Place, Nellysford VA 22958	36 Mil RPP Pipe Boots		9,125 2	SF Each
Elmont Substation RT623, Atlee VA	XR-5 8 oz GeoTextile Batten SS 6 OC Pipeboots		14,106 25,777 246 21	SF SF LF Each
Perdido LF Section 4 13009 Beula Road, Cantonment FL 32533	60 Mil HDPE Textured GeoNet GCL Single-sided Composite 8 oz Geotextile Rain Cover		1,187,685 528,701 520,192 510,268 156,595 336,171	SF SF SF SF SF SF
Surry Power Station 5570 Hog Island Road, Surry County VA 23883	XR-5 8130 Batten		3,700 75	SF LF
Seagull Stadium 1350 Wayne Street, Salisbury MD 21801	30 Mil HDPE Smooth 8 oz Non-woven Geotextile		7,800 108,000	SF SF
Warrenton Toyota Route 29, Warrenton VA 20186	30 Mil PVC 8 oz Geotextile Pipe boots		11,367 22,500 8	SF SF Each
Boiling AFB Repair #2 110 Luke Avenue Bldg 5681, Washington DC	60 mil HDPE	Repair		
Resicon-Braintree-Weymouth Pump Station Quincy MA		Repair		
Eastern Divirsified Metals Change Order 02 Township Road 922, Hometown PA 18252	40 Mil HDPE Textured		81	SF
Co-Gentrix 5001 Commerce Road, Richmond VA 23234	40 Mil HDPE Black/White 16 oz GeoTextile Batten SS		1,435 2,147 88	SF SF LF
Appomatox County LF State Route 632, Appomattox VA 24522	60 Mil HDPE Textured	Repair		
Charles City Landfill Repair 8000 Chambers Road, Charles City VA 23030		Repair		
Norfolk Naval Base Tank CEP-11 Norfolk Naval Base, Norfolk VA 23511	XR-5 8130 16 oz Non-woven Geotextile Batten		16,991 16,458 733	SF SF LF

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Birchwood Power Station 10900 Birchwood Drive, King George VA 22485	80 Mil HDPE 16 oz GeoTextile	Repair	
NED Power Station HC76 Box 380R, Mount Storm WV 26739	XR-5 Batten		4,032 SF 328 LF
Livingston LF 6241 Massey Road, Spotsylvania VA 22553	60 Mil HDPE Textured	Repair	
Co-Gentrix 5001 Commerce Road, Richmond VA 23234	40 Mil HDPE Black/White 16 oz GeoTextile Batten SS		1,500 SF 1,500 SF 120 LF
Bridges over Buffalo Creek HHY 81 -2 Miles South of RT 60 Instersection, Lexington VA 24450	30 Mil PVC Batten		30,106 SF 57 LF
Evershire Subdivision Intersection of Hopeman PKWY & State RT 254, Waynesboro VA 22980	Bentofix GCL NW		23,400 SF
Rivanna WTP Scottsville Lagoon 1 & 2 633 James River Road, Scottsville VA 24590	45 Mil RPP 16 oz Geotextile Batten Pipe Boots		10,465 SF 10,465 SF 204 LF 7 Each
Rivanna WTP Crozet Lagoon 2 3 Notched Road, Crozet VA 22932	45 Mil RPP 16 oz Geotextile Batten Pipe Boots		7,876 SF 6,720 SF 112 LF 4 Each
Lehigh Cement Company Repair 1, 2 & 3 675 Quaker Hill Road, Union Bridge MD 21791	40 Mil White HDPE Textured	Repair	
Bolling AFB Repair 110 Luke Avenue Bldg 5681, Washington DC	40 mil HDPE	Repair	
Pocahontas Prison Detention Ponds 920 Old River Road, Bluefield VA 24605	40 Mil HDPE Smooth 8 oz Geotextile Batten		40,793 SF 40,793 SF 100 LF
Wave Pool 1985 Princess Anne Road, Virginia Beach VA 23456	40 Mil HDPE Smooth		8,681 SF
Bear Island Paper Repair 10026 Old Ridge Road, Ashland VA 23005	60 Mil HDPE	Repair	
Goldsboro Repair 500 Gateway Drive, Goldsboro NC 27534	No Material	Repair	
Detention Ponds RT1 & Easy Street, Port St. Lucie FL 34994	30 Mil PVC		39,594 SF
M. C. Dean Cut-off wall Basin 1 & 2 Spratt Road, Carmel Church VA 22546	30 Mil PVC		10,588 SF
Honeywell Repair 4000 Bermuda Hundred Road	45 Mil RPP	Repair	
SPSA Landfill Cell Closure I-IV Phase IV 1 Bob Foeller Drive, Suffolk VA 23434	40 Mil LLDPE Textured Double-sided Composite		1,429,324 SF 1,433,966 SF
New Georgia LF Phase 1 Change Order 01 & 02 Tank 2500 47th Ave, Birmingham AL 35217	60 Mil HDPE MicroSpike		15,533 SF
Old Dominion LF Repair 2100 Charles City Road, Richmond VA 23231	DuraSkrim	Repair	

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New Georgia LF Phase 1 2500 47th Ave, Birmingham AL 35217	60 Mil HDPE MicroSpike		485,874 SF
	GCL		485,874 SF
	Pipe Boots		19 Each
Duke Power Substation Pleasant Green Road, Durham NC 27705	HDPE	Repair	
Norfolk Southern Railway 1550 Marietta Road, Atlanta GA 30318	XR-5 (Reinforced & Unreinforced)	Repair	
Bethlehem Lot 3 Pond 4 OPUS East Brodhead Road, Bethlehem PA 18020	30 Mil PVC		52,509 SF
	Batten Attachment		16 LF
Williamsburg Dodge/Norge Neighborhood 7101 Richmond Road, Williamsburg VA 23188	30 Mil PVC		17,196 SF
	Batten Attachment		16 LF
Cluster Springs Sand Filter 7091 Huell Matthews Hwy, Alton VA 25520	40 Mil HDPE Smooth		7,442 SF
	Pipe Penetrations		4 Each

2005-2006

Brunswick LF Rain Cover 107 Mallard Crossing Road, Lawrenceville VA 23868	8 Mill Duraskrim		240,260 SF
Rockbridge LF 231 Landfill Road, Buena Vista VA 24416	Double-sided GeoComposite		800,643 SF
	30 Mil PVC Pipeboots		18 Each
Howard Hughes Medical Institute 19710 Janelia Farm Blvd, Ashburn VA 20147	Bentomate ST GCL		140,000 SF
	30 Mil PVC		119,990 SF
	12 oz Geotextile		140,000 SF
Berkeley Gateway Phase 1 Intersection RT 901 & Rt 11, Berkeley Springs WV 25401	30 Mil PVC		73,500 SF
Re-use Lake @ Tesoro 3302 South Bend Blvd, Port St. Lucie FL 34984	40 Mil Smooth HDPE		79,988 SF
	40 Mil Textured HDPE		93,308 SF
A.D. Davis 1120 3rd Street, St. Augustine FL 32095	30 Mil HDPE		15,392 SF
ALCOA Eastalcoa Industrial Landfill 5601 Manor Woods Road, Frederick MD 21703	D16WB Duraskrim		142,268 SF
	16 oz. Geotextile		143,299 SF
	8 oz. Geotextile		144,743 SF
King George Landfill Cell 13 10376 Bullock Drive, King George VA 22485	8 BBR Duraskrim		294,100 SF
Bethel LF 100 N Park Lane, Hampton VA 23666	60 Mil HDPE	Repair	
North Cross Center Phase 2 Ashland VA	D16WB Duraskrim		8,200 SF
Austin Quarter LF 2701 Austin Quarters Road, Graham NC 27253		Repair	

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Shoosmith Sanitary LF Cell 23 11800 Lewis Road, Chester VA 23831	60 Mil Microspike HDPE Double sided Composite Bentomat GCL ST		620,779 SF 632,194 SF 622,835 SF
The Virginian Golf Course 22512 Clubhouse Ridge, Bristol VA 24202	30 Mil PVC		18,893 SF
Mountain View LF Leachate Diversion Cap 13300 New Georges Creek, Frostburg MD 21532	8 Mil Duraskrim		130,800 SF
Lehigh Cement Company Additional Pond 675 Quaker Hill Road, Union Bridge MD 21791	40 Mil White HDPE Textured 32 oz Non-woven Geotextile Inbed (Polylock) Attachment		59,130 SF 59,180 SF 220 LF
Lancaster County Training Center 101 Champ BLVD, Mannheim PA 17545	40 Mil PVC	Repair	
Gaston Copper Infiltration Basin 700 Southbound Road, Gaston SC 29053	36 Mil Reinforced Polypropelyne 6" diameter Sandtube Weights		37,405 SF 1,530 LF
Wabash Alloys Tipton 841 S. 550 West, Tipton IN 46072	45 Mil RPP		13,416 SF
Bonita Cove FL Jacksonville FL	30 Mil PVC		130,164 SF
McGlothlin Residence 20489 Carson Road, Bristol VA 24201	40 mil Smooth LLDPE 10 oz non-woven Geotextile		117,450 SF 102,650 SF
Knowles Place- Windsong Corner of Glenridge Way & General Reese Road, Winter Park FL 32789	40 Mil Textured HDPE Batten		33,706 SF 48 LF
Bristol Ponds TN 470 Industrial Park Road, Piney Flats, TN 37686	60 Mil HDPE Batten SS 6 OC		18,484 SF 8 LF
Northen Middle School 616 Spencer-Dixon Road, SummerField NC 27455	40 Mil HDPE 30 Mil PVC		26,877 SF 7,275 SF
Paseo Irrigation Pond	30 Mil PVC BioDrain		286,222 SF 286,222 SF
Garrett County LF phase 2, 3 & Change orders 3118 Oakland-Sang Run Road, Oakland, MD 21550	60 mil HDPE GCL Bentomat 16 oz nonwoven Geotextile		325,771 SF 347,380 SF 355,768 SF
Tally Ho Farms 4295 Louisia Road, Keswick VA 22947	Bentomat GCL- DN		11,752 SF
Chesapeake Tank 416 Dominion Blvd, Chesapeake VA 23320	60-mil HDPE		1,526 SF

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Virginia Power Greenway Station 22150 Shellhorn Road, Ashburn, VA 20147	8130 XR-5 Batten to Concrete		2,833 SF 244 LF
Atlantic Waste Development Waverly, VA	stainless steel batten to concrete		22 LF
Doe River Gorge	40ml HDPE	repair	
Meadow Dam/Primeland Resort Busted Rock Road Stuart, VA 24171	Bentomat CL/GCL		17,400 SF
Waste Water Lagoon Repair Wye Mills, MD	40 mil HDPE		48 SF
Brunswick Co 107 Mallard Crossing Road, Lawrenceville, VA 23868	LLDPE welding		2,275 SF
Charles City Odor Control Repairs Charles City, VA	40 mil HDPE		1,000 LF
Tyson Foods QA Temperance, VA		repair	
Shepherdstown, Specialty Storage Shepherdstown, WV	Aqua-Seal GCL		17,000 SF
Wellville Substation Foundation Blackstone, VA	3000B Lining		720 SF
River Club at Twins Island 7155 Stokes Drive, Hayes, VA 23072	30 Mil PVC Liner		30,000 SF
Atlantic Waste Disposal Waverly, VA		repair	
Emergency Liner Repairs Stafford, VA		repair	
Old Dominion Landfill Richmond, VA	Extruder Rental		
Dominion Power Repairs Chesapeake, VA		repair	
Hog Waste Lagoon Repairs 434 East Main Street, Waverly, VA	40 mil Smooth HDPE		19,584 SF
Brunswick Waste Leachate Tank Brunswick County, VA	60 mil Textured HDPE		8,362 SF

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Tecton Products Roanoke, VA	40 mil HDPE		4,200 SF
Clearwater Unlimited Project Charlotte, NC		repair	
ACF Roof Repairs		repair	
Honeywell Repairs, Chesterfield Plant 4101 Bermuda Hundred Road, Chester, VA 23831		repair	
Spotsylvania Co. repair Spotsylvania Co.	60 mil HDPE	repair	
Farm 17 Pipes Waverly, VA		repair	
Stafford Station Stafford Station, VA		repairs	
Bear Island Repair 10026 Old Ridge Road, Ashland, VA 23005		repairs	
Marsh Run Power Gen. Plant 12109 Lucky Hill Road, Remington, VA 22734		repairs	
Rain Tank Lining Richmond, VA	30 mil PVC		2,954 SF
BFI Old Dominion Charles City, VA		repair	
Oak Ridge Commons Repairs 1667 NC Highway 68 N, Oak Ridge, NC 27310		repair	
Wheelabrator Repair 1 Abrasive Avenue, Bedford, VA 24523	36 roll Tan/Black Reinforced Polypropylene		1,775 SF
623 Landfill Manhole Richmond, VA		repair	
623 Landfill Liner Repair Rockville, VA		repair	
Wal-Mart Pond Liner 2112 Northwestern Pike, Winchester, VA 22603	Claymax 200R Bentomat ST		45,000 SF 31,000 SF

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Decatur County Landfill Cell Decatur County, GA	60 mil HDPE		367,536 SF
	GCL		367,536 SF
	Rain Flap extrusion		367,536 LF
	Pipe penetration		2 EA
United Stor-All Center Chester County, PA	Bentomat DN GCL		18,000 SF
Oak Ridge Commons Guilford Co., NC	40 mil HDPE		81,948 SF
Charleston Sanitary Board Repairs Charleston, WV		repair	
Shoosmith Landfill Repairs 11800 Lewis Road, Chester, VA 23831		repair	
PVC Lining Evaluation 5001 Commerce Road, Richmond, VA	60 mil HDPE	repair	
BFI/Old Dominion Landfill Repairs PO # Wade Bailey		repair	
Riverhead Nursery 1295 Mt. Elbert Road NW, Riner, VA 24149	36 mil Reinforced Polypropylene		10,634 SF
CCPS Repair New Church, VA	60 mil HDPE		1 SF
Clover Power Station Repairs Clover, VA 23060		repair	
Brunswick Landfill Repairs Lawrenceville, VA		repair	
Bontex XR-5 Liner Repair One Bontex Drive, Buena Vista, VA, 24416		repair	
Tarmac Pond 15700 Lee Hwy, Centerville, VA 20120	Rufco 3000B		19,200 SF
Hilltop Landfill Composite Alexandria, VA	Double sided geocomposite		10,222 SF
623 Pipe Repairs Richmond, VA	6' HDPE electro fusion couplers		2 EA
Virginia Beach Landfill Repairs Virginia Beach, VA		repair	
Clover Repairs Breakdown Route 92, Clover, VA 24534	40 mil HDPE		19,575 SF
North Ridge Professional Center Frederick, MD	30 mil PVC		27,684 SF
GCRC Wetlands 700 Southbound Road, Gaston, SC 29053	30 mil PVC		116,837 SF

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Dominion Power Coal Pile Run-Off South Boston, VA 24592	40 mil textured HDPE 45 mil Reinforced Polypro GCL Installation Bentomat DN GCL Geocomposite 8 0z Geotextile		143,360 SF 73,618 SF 20,500 SF 20,500 SF 143,360 SF 73,618 SF
Louisa County Landfill Phase 1 Closure Louisa County, VA	GCL		139,392 SF
Sunscape Apartments-Pipe Skirt Colonial Avenue S.W. and Odgen Road S.W., Roanoke, VA	30 mil PVC		1,949 SF
Gaskins Road Salt Storage Facility Richmond, VA	40 mil HDPE		6,607 SF
Someday Farm Orange County, VA	40 mil PVC		52,380 SF
Opus Allentown, PA	40 mil HDPE		159,100 SF
Honeywell Seam Testing Hopewell, VA		repair	
623 Landfill Leachate Piping Richmond, VA	8" SDR perforated pipe		2,777 LF
623 Landfill Leachate Piping Richmond, VA	6 oz Non-woven Geotextile		541,440 SF
Cell #3 Gas Repair-Bubble & Pipe Cluster Waverly, VA		repair	
Swanee Co LF 10910 144th Street, Live Oak, FL 32060		repair	
Hilltop Sand and Gravel 7950 Telegraph Road, Alexandria, VA 22315		repair	
Charles City LF Repair 8000 Chambers Road, Charles City, VA 23030		repair	
Dominion Manassas, VA	XR5-8130		2,038 SF
Moscia Sink Hole #19 1800 Carey Blvd., Hutchinson, KS 67501	60 mil HDPE		178,877 SF
Austin Quarter Road SWMF Cells 1A and 2A 2701 Austin Quarter Road, Graham, NC 27253	60 mil HDPE GCL geocomposite-single sided 40 mild HDPE cover		559,327 SF 559,327 SF 559,327 SF 450,912 SF
Maplewood Landfill Rain Cover 20221 Maplewood Road, Jetersville, VA 23083	Duraskrim 8 mil		261,360 SF
Geosynthetic Construction for Taylor Road Landfill Area E 12200 Taylor Road, Chesterfield, VA 23838	60 mil HDPE Liner		168,460 SF
King and Queen Landfill Little Plymouth, VA		repair	

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Wharton Supply	60 mil smooth HDPE		608 SF
Luck Stone Powels Lane, Staphord Co., VA	60 mil textured HDPE		47,150 SF
City of Richmond WTP West Chemical Feed Dike Lining 3910 Douglas Dale Road, Richmond, VA	45 mil potable reinforced polypropylene		6,902 SF
FMC WWTP Spotsylvania, Co.		repair	
Atlantic Waste Development 3474 Atlantic Lane, Waverly, VA 23890		repair	
Pond AE Duval County, FL	30 mil PVC		49,146 SF
Calvert Gateway Dunkirk, MD		repair	
Rogers-Chenault Townhouses Tappahannock, VA	30 mil HDPE		9,540 SF
PNC Bank Macungie, PA	20 mil PVC		20,213 SF
Tequesta Job City of Tequesta, FL	40 mil HDPE 30 mil PVC		22,000 SF 22,000 SF
Rapahannock County Landfill: Leachate Pond Repairs Rt 639 Weaver Road, Rapahannock County, VA	60 mil HDPE	Repair	
Atlantic Waste Disposal Waverly, VA		Repair	
Thornburg WWTP Liner Repairs Spotsylvania County, VA	40 mil liner	Repair	
Energy Unlimited Sam Furr Road, Huntersville, NC 28078		Repair	
Maplewood Landfill Rain Cover 20221 Maplewood Road, Jetersville VA 23083	8 Mil Duraskrim		319,200 SF
Jefferson Villas Lynchburg, VA	36 mil reinforced polypropylene		25,187 SF
Wetland Repairs Dahlgren, VA	8130 XR-5 Geomembrane		450 SF
Calvert Gateway/Dunkirk Center, 60-day Storage Pond Towne Center Boulevard, Dunkirk, MD 20754	8228 XR-3 Geomembrane Liner		35,865 SF
Boyd's Crossing Runny Mead Road, Bunker Hill, WV	60 smooth mil HDPE		40,314 SF
Orange County 5901 Young Pine Road, Orlando, FL 32829		Repair	
Maplewood Landfill Rain Cover 20221 Maplewood Road, Jetersville, VA 23083	Duraskrim 8 mil		319,200 SF

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Durbin Crossing Phase 1 Russell Sampson Road, St. Augustine, FL	30 mil PVC 30 mil PVC 30 mil PVC 30 mil PVC 30 mil PVC		1,440 SF 10,000 SF 2,160 SF 2,700 SF 4,480 SF
Aberdeem Cut-Off Wall Roberts Road, St. Augustine, FL	30 mil PVC		10,608 SF
BASF Lagoon Closure 3340 Norfolk Road, Portsmouth, VA 23704			
Starbuck's Repair Oriana Road/US Highway 17, Newport News, Va	XR-5	Repair	
United Stor-All Center Tabas Lane, Exton PA	Bentomat DN GCL		18,000 SF
Tarmac Pond 15700 Lee Hwy, VA 20120			
VDOT SWM Ponds 3 phases 170 Parkersburg, Turnpike, Staunton, VA	GCL Bentomat ST		290,426 SF
Illuka Resources Repair	80 mil HDPE		225 SF
Bolling AFB 110 Luke Avenue Bldg 5681, Washington DC	40 mil HDPE SS Batten pipe penetrations		27,633 SF 645 LF 8 Each
TOTAL:			**21,330,977**

2003-2004

Garrett County LF 3118 Oakland-Sang Run Road, Oakland, MD 21550	60 mil HDPE GCL Bentomat 16 oz Nonwoven Geotextile		53,750 SF 53,750 SF 53,750 SF
SPSA LANDFILL CELL 1-4 1 Bob Foeller Drive, Suffolk, VA 23234			
Manasas Park			
Gables Rothbury Square Montgomery County, MD			
Clover Power Station Black Walnut Road, Clover, VA			
Orange County Utilities 701 West McCormick Road, Apopka, FL 32703			
Orange County Landfill 5901 Young Pine Road, Orlando, FL 32829			

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VDOT D27 I-95 Telegraph Road, Fairfax County, VA			
Ruthledge Creek WWTP Industrial Road, Amherst, PA 24521			
Spotsylvania Repair Thornburg VA		Repair	
Roger-Chenault Townhomes Tappahanock, VA	30 Mil HDPE		9,540 SF
Bear Island Paper Company 10026 Old Ridge Road, Ashland, VA 23005			
Infinion Technology Blvd, Richmond, VA	60 mil HDPE		4,356 SF
Infinion Technology Blvd, Richmond, VA	60 mil HDPE		2,000 SF
Camp Nawakwa Biglerville, VA	60 mil HDPE Smooth		23,830 SF
The Homestead Hot Springs, VA	40 mil HDPE		62,323 SF
White Street Landfill Greensboro, NC	60 mil HDPE GCL Reinforced GCL Unreinforced		560,914 SF 90,962 SF 469,952 SF
BWI Electrical Upgrade Edgewood, MD	60 mil HDPE		1,271 SF
Comfort Inn Detention Pond Frederick, MD	60 mil HDPE Text- Gunseal		14,000 Sf
Horsepen Rd. Richmond, VA	20 mil PVC		15,750 SF
Jacksonville Shipyard Project Jacksonville, FL	30 mil HDPE		1,850 SF
Pittsylvania Co Landfill Danville, VA	HDPE 60 mil GCL Reinforced/Reinforced Geocomposite Geotextile		507,583 SF 508,424 SF 163,066 SF 362,276 SF
Livingston Landfill Spotsylvania, VA	60 mil HDPE GCL Geonet Geocomposite		540,374 SF 270,187 SF 270,187 SF 270,187 SF
CSX T. Avon Yard Project Indianapolis, TN	Geotextile sand bag Geomembrane liner		400 ea 1 ea
Charles Co. Landfill Waldorf, MD	60 mil HDPE Smooth tri-planner geocomposite Geotextile 10 oz pipe boots		482,342 sf 465,644 sf 340,000 sf 3 ea
Dupont Floating Cover Richmond, Va.	fabrication of the skirt floating cover for Tank 501		1 ls

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Clover Power Station Clover, VA	sacrificial textile - 6 oz 8 oz Geotextile 40 mil HDPE textured rain flap	48,400 sy 77,440 sy 1,400 lf
Single Oakes Estates Fredericksburg, Va.	Bentomat DN Claymax 600 CL	81,415 sf 4,235 sf
Shirley Plantation Containment Charles City Co., Va.	secondary containment structure	1 ls
Accomack Co. Landfill Accomack, Va.	HDPE 60 mil liner clay liner	72 sf 48 sf
Westminster Canterbury Lynchburg, VA	Bentomat st-gcl	6,489 sf
Sports Authority Detention Philadelphia, PA	40 mil pvc liner Geotextile	16,970 SF 33,940 SF
Essroc Landfill Buckeystown, MD	60 mil HDPE liner Duraskrim 12	7,533 sy 14,500 sy
Camp Barnhardt Badin, NC	60 mil HDPE smooth	50,611 sf
Rivers Bend Nursery Riner, Va.	36 mil polypropylene	9,000 sf
Clover Power Clover, Va.	40 mil LLDPE textured geocomposite	1,568,160 sf 1,568,160 sf
BEAR ISLAND PAPER REPAIR Dawson, Va.	repair HDPE liner	3 hr
Maury Service Authority Lexington, VA	60 mil HDPE Textured battening to concrete 18" pipe boot	17,524 sf 12 lf 1 e
Degussa Containment Lagoon Hopewell, VA.	100 mil HDPE 18" Pipe Boot stainless steel battening	6,950 sf 1 ea 300 lf
Ivy Sanitary Landfill Albemarle Co., VA	GCL Bentomat St Liner	10,000 sf
Conoco Underground Tank Lining Lorton, VA	HDPE 60 mil smooth GSE liner material	1
Kauffman Aquaculture Center Topping, VA	HDPE 40 mil smooth geo membrane	990 sf
Corral Farm Landfill Warrenton, Va.	12 mil rain cover Geotextile sand bag	132,000 sf 4,000 ea
Peters Creek Lagoon Closure Clairton, PA	40 mil HDPE Textured Geocomposite GCL tie-in weld to existing pipe bonds s. s. batten attachment	188,096 SF 342,500 SF 171,500 SF 1,440 LF 13 EA 176 LF
Auburndale Power Partners Auburndale, FL	xr-5 liner 58" per sq ft Geotextile sand bag anchor trench ss battening	30,450 sf 1,000 ea

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Norfolk Naval Station Norfolk, VA	XR-5 liner material battening attachment 6" battening attachment 12"	6,600 sf 26 lf 582 lf
Patent & Trademark Office Alexandria, VA	40 mil LLDPE	5,700 SF
VAPOR BARRIER Washington, D.C.	vapor barrier installation additional mobilization repair 40 mil HDPE daily rate liner repair 60 mil HDPE smooth	
Hominy Creek W/MF Wilson, NC	60 mil HDPE-Smooth S. S. Batten Attachment Pipe Penetration Boots Cushion Geotextile Floating Baffle Curtain	99,647 SF 188 LF 2 EA 42,647 SF 450 LF
Dome Liner Welding Henrico Co., VA	dome liner welding	1 EA
Norfolk Southern, Roanoke Repair Roanoke, VA	two techs to repair XR-5 liner	1 EA
Fluvanna Generation Station Fluvanna, VA	Pond Liner w/Claymax and Bentomat EC-3 Erosion Blanket Silt Fence	1 LS 3,400 SY 23,000 SY 2,850 LF
Rub Sheets for Lined Lagoon Buena Vista, VA	repair of IEQ pond liner, erosion strip in INF pond	1 EA
Weyerhaeuser LF 1B & 2 Plymouth, NC	HDPE 60 mil. Smooth Liner HDPE 60 mil. Textured Liner GCL Unreinforced Material Geotextile 32 oz. Tie-in to Existing Cell GCL Reinforced Material 20 mil PVC	554,211 SF 693,470 SF 554,211 SF 692,470 SF 521 LF 138,259 SF 5,000 SF
Underground Detention Bed Malvern, PA	Separation Geotextile Pipe Boots PVC Adhesive HDPE liner and Geotextile	1,000 SY 4 EA 1 GL 21,900 SF
Site 6-Dahlgren Dahlgren, VA	installation of Bentomat	696,960 SF
Hanover Co. Landfill Hanover Co., VA	XR-5 8130 Est. 8446 SF	1 EA
Norfolk Southern/Columbia Columbia, SC	11 mil Rain Cover	361,200 SF
R. Board Landfill Cell Rain Cover Stafford, VA		

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Trickling Filter Liner Blackstone, VA	HDPE 60 mil Smooth Liner Material	22,602 SF
	Liner Attachment to Concrete	476 LF
	Pipe Penetration Boot (1 1/2")	6 EA
	Penetration in Center 60"	1 EA
	SS Battening	48 LF
	HDPE 60 mil Smooth Liner	28,476 SF
Lake Monticello WWTP Fluvanna Co., VA	Geotextile Protective Layer	2,520 SF
	Stainless Steel Batten Strips	185 LF
	8" Pipe Penetration Boot	2 EA
	Installation of Gas Vents	12 EA
	XR-3 Reinforced	172,291 SF
Wight Nurseries La Grange, NC	Flap Vents space 50' OC Top Slope	40 EA
	Liner Attachment to Concrete	50 LF
	Additional XR-3	178,141 SF
	PVC 60 mil	19,710 SF
Lancaster County Training Center Manheim, PA	Liner Attachment to Concrete	100 LF
	HDPE 60 mil Smooth Liner	22,602 SF
Trickling Filter Liner Blackstone, VA	Liner Attachment to Concrete	476 LF
	Pipe Penetration Boots	6 EA
	Penetration in Center 60"	1 EA
	XR-5 8130 Liner Material	51,591 SF
Stanton Energy Center Unit A Orlando, Fl	Stainless Steel Battening	390 LF
	Pipe Penetration Boots	65 EA
	11 mil Rain Cover	361,200 SF
R. Board Landfill Cell Rain Cover Stafford, VA	XR-5 8130	8,446 SF
Norfolk Southern Columbia, SC	10 oz. Cushion Fabric	8,446 SF
	Aluminum Battening	42 LF
	40 mil Textured Liner Material	8,775 SF
Berkley Avenue Drainage System Norfolk, VA	16 oz. Geotextile	47,101 SF
I95 & Rt 1 Woodrow Wilson Bridge Alexandria, VA	60 mil HDPE Smooth	482,342 SF
Charles County Landfill La Plata, MD	60 mil HDPE Textured	28,800 SF
American Safety Razor Verona, VA	Liner Attachment to Concrete	16 16
	Pipe Penetration Boots	7 EA
	XR-5 8130 Liner	29,457 SF
Norfolk Southern Tanks 01/02 & 05 Columbia, SC	10 oz. Geocomposite	29,457 SF
	Aluminum Batten	487 LF
	Tuff Track Walkway Mat	266 LF
	PVC 30 mil	6,000 SF
STEP Cap Repair Oak Ridge, TN	Geocomposite 2-sided 8 oz.	6,000 SF
	HDPE 60 mil	1,517 SF
Cherrystone Aqua Farms Willis Wharf, VA	GCL Claymax	137,250 SF
South Landfill Remedial Action Plan Colonial Height, VA	HDPE 60 mil	97,195 SF

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Rt 28/29 Interchange Fairfax, VA	HDPE 60 mil Liner	109,485 SF
Wastewater Treatment Facility Gibson, NC	60 mil HDPE Smooth/Textured	168,589 SF
Georgia Pacific Mob 2 Big Island, VA	Geocomposite 6 oz	90,523 SF
	Geotextile	15,199 SY
	Tie into Existing Liner	450 LF
	Tain Flap Extrusion Weld	450 LF
	60 mil HDPE	10,456 SF
Iluka Minerals Stony Creek, VA	60 mil HDPE Textured	6,454 SF
Chemical Feed System Suffolk, VA	Geotextile	8,240 SF
	Concrete Attachment	12 LF
	60 mil HDPE Textured	384,237 SF
Loudon County Loudon County, VA	Bentomat DN	371,427 SF
	Tie-In To Existing Liner	2,700 LF
	Duraskrim 12 WB	416,212 SF
	40 mil LLDPE	14,625 SF
	60 mil HDPE	702,000 SF
Pittsburgh International Airport Pittsburgh, PA	10 Oz Geotextile	702,000 SF
	60 Oz Geotextile	702,000 SF
	Convex CB 12 WB	15,042 SF
Field Hockey Facility	60 mil HDPE	195,662 SF
Milton Grove C & D Landfill Mount Joy Township, PA	Geotex 1751	207,276 SF
	Transnet 220 Geonet	196,000 SF
	Bentomat ST	79,651 SF
	Typar 3601	80,379 SF
	HDPE 60 mil	18,392 SF
Wareham's Pond Williamsburg, VA	Concrete Attachment	24 LF
	20 mil PVC	24,750 SF
Roanoke Regional Airport Roanoke, VA	Battening to Concrete	700 LF
	HD 40 mil Smooth	20,427 SF
Temporary Lagoon Liner Pottstown, PA	XR-5 Liner	7,700 SF
Ericsson Corp. Site Services Lynchburg, VA	Geotextile 10 oz	7,700 SF
	Dura-Skrim 6BB	284,000 SF
Maplewood Landfill Amelia, VA	30 mil PVC	6,837 SF
Park West Foundation Mt. Pleasant, SC	Batten Re-Attachment	603 SF
	Batten Attachment	300 LF
	Pipe Boots	17 EA
	60 mil HDPE Smooth/Textured	1,034,642 SF
Enoree LF Greenville, SC	Bentomat	1,034,642 SF
	60 mil HDPE Conductive	29,285 SF
Augusta Pond Repair Augusta Co., VA	Remove Existing Liner	29,285 SF
	Tie-In to Existing Liner	736 LF
	Pipe Boots	9 EA
	Claymax GCL	3,617 SF
48" Round GCL Pits South Hill, VA	GCL Bentomat ST	110,385 SF
Governor's Green Williamsburg, VA	Xr-5 Liner	13,940 SF
Clifton Substation Clifton, VA	2 Techs/Repair Liner	1 EA

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CF Industries, Inc-Ahoskie Tunis, NC	40 mil HDPE 60 mil EDPM	20 SF 1,890 SF
Holman Cement Plant Holly Hill, SC	Battening to Concrete 30 mil PVC	189 LF 5,758 SF
VDOT National Avenue Staunton, VA	Batten Attachment HDPE 40 mil Smooth	24 LF 1,416 SF
B.I. Chemical Petersburg, VA	Geocomposite 8 oz 60 mil HDPE Smooth	1,416 SF 374,000 SF
New River Resource Authority Pulaski, VA	Tie-In to Existing Liner 60 mil HDPE Smooth/Text	942 LF 237,147 SF
Baldwin County Landfill Pittsburg, PA	Tie-In to Existing Liner Bentomat	850 LF 28,000 SF
Storm Water Pond Liner Walkersville, MD	HDPE 40 mil Smooth	6,800 SF
B.I. Chemicals Solvent Removal Plant Petersburg, VA	Geocomposite 8oz Attachment to embedded weld Geomembrane Moisture Barrier	1,800 SF 36,486 SF
Acid Water Mitigation Covington, VA	Geocomposite XR-5 Liner	115 LF 2,903 SF
Fuel Tank Reservoir Liner Lebanon, PA	Tuff Trac Batten Attachment Geotextile	120 LF 75 LF 98,010 SF
I-95 Rain Cover Lorton, VA	Rain Cover 60 mil HDPE 30 mil PVC	60,000 SF 10,125 SF 14,420 SF
SWM Pond Phase II, Owners Club Hot Springs, VA	60 mil HDPE Textured	976,099 SF
Augusta Co/Staunton Landfill Staunton, VA	Tie-In to Phase 1 Claymax 200R	1,680 SF 13,078 SY
Norfolk Southern Cells 1, 2, 3, 4 Norfolk, VA	60 mil HDPE Smooth/Text	703,870 SF
Municipal Solid Waste LF Greenwood Co., SC	Tie-In to Existing Liner XR-5	882 LF 2,359 SF
Norfolk Southern Fuel Containment Huntingburg, IN	60 mil HDPE Smooth	2,132 SF
Goldschmidt Chemical Hopewell, VA	Battening 16" pipe boot 60 mil HDPE smooth	160 LF 1 EA 81,313 SF
Municipal Solid Waste Landfill Washington Co., GA	60 mil HDPE Texture 40 mil HDPE	81,313 SF 22,425 SF
Suffolk Regional LF Suffolk, VA	40 mil HDPE-smooth	4,500 SF
B.I. Chemicals Petersburg, VA	Geocomposite 8oz Bentomat ST	5,600 SF 86,000 SF
New Castle Airport Pond Liner New Castle , DE	60 mil EPDM	4,800 SF
Dominion Semiconductor Manassas, VA	45 mil PPE	24,570 SF
Randolph Floating Cover Randolph, VT	Repair to pond liner	

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Transylvania County Pond Repair Transylvania County, NC	Bentomat ST	75,300 SF
Appalachia Landfill Wise County, VA	Claymax 200R 60 mil Texture	167,200 SF 549,225 SF
Surry County Landfill Surry County, NC.	GCL Tie-In To Existing Liner XR-5 Material	549,000 SF 1,370 LF 69,380 SF
N.S. Two Million Gallon Storage Elkhart, IN	60 mil HDPE Textured	54,250 SY
Buncombe County Landfill Buncombe Co., NC	Composite GCL Bentomat ST. 60 mil HDPE	54,250 SY 110,097 SY 323,341 SF
Orange County Landfill Chapel Hill, NC	GCL 60 mil HDPE Texture	323,980 SF 110,000 SF
Champion Phase II LF Roanoke Rapids, NC	Claymax 200R Bentomat ST Geotextile 30 mil PVC	242,000 SF 110,000 SF 352,000 SF 12,858 SF
Williamsburg Dodge Pond Liner Williamsburg, VA	60 mil HDPE Smooth	563,000 SF
White Street Landfill Greensboro, NC	60 mil HDPE Texture GCL 60 mil HDPE Station	102,000 SF 665,000 SF 7,873 SF
Prillaman Chemicals Chester, VA **Commercial Power Station** New Church, VA	60 mil HDPE-smooth t-lock temp berm for 60 mil HDPE Labor-welding	93,507 SF 2,766 LF 210 LF 58 HR
Pond Liner Welding-Hotsprings Hotsprings, VA	16 ozGeotextile	10,423 SF
Bristol Quarry-Fire Damaged Bristol, VA	Geocomposite LLDPE 80 mil HDPE smooth	11,212 SF 9,887 SF 13,091 SF
ECOLAB Martinsburg, WV	16 oz Cushion Fabric 12" pipe boot	3,000 SF 1 EA
Bristol Quarry Landfill Bristol, VA	60 mil Geomembrane Protective Geotextile Geotextile Bentomat ST	160,553 SF 160,553 SF 203,207 SF 126,700 SF
Cypress Creek C. A. Barrs Contracting	60 mil HDPE Liner	5,186 SF
ETC Building Watchall, VA	60 mil HDPE Liner	35,955 SF
Commercial Power Station New Church, VA	T-lock Weld to Polylock 60 mil HDPE	1,327 LF 1,500 LF 15,000 SF
Brunswick Waste Mgmt. Facility Lawrenceville, VA	S.S. Batten Welding Liner XR-5	132 LF 210 LF 1,800 SF
Pit Liner Bristol, PA	Amoco 4510 Battening 45 mil PPE	3,600 SF 80 LF 4,716 SF
Continental Teves Pit Liner Fletcher, NC	40 mil PVC	16,594 SF
Christina River Ponds Wilmington, DE	Pipe Boots 8", 24", 60" 30 mil PVC	119,829 SF
VDOT-SWM Basin Staunton, VA	XR-5	2,790 SF

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Northern VA Electric		EA
Manassas, VA	40 mil LDPE	460,916 SF
Quantico Landfill Closure		
Quantico, VA	Geotextile	460,916 SF
Quantico LF Closure-Additional		
Quantico, VA	60 mil HDPE	1,029 SF
Beaumont WWTP Extension	Amoco 4516	1,029 SF
Powhatan, VA	60 mil HDPE	180,219 SF
Corral Farm Landfill-Phase IV	Amoco 4510	180,219 SF
Fauquier Co., VA	Tie in to Cell V	401 LF
	Clay Liner Under Tie In	401 LF
	60 mil HDPE-smooth	13,500 SF
Allen Family Lagoon	Pipe Boots	2 EA
Dagsboro, DE	Vent/Condensate Boots	22 EA
Bedford Co., Landfill		
Bedford Co., VA	Amoco 4506	328,860 SF
Ashcake Road Landfill		
Ashland, VA	60 mil HDPE Liner	557,000 SF
Hanes Landfill	GCL	518,000 SF
Winston Salem, NC	Geocomposite	341,000 SF
	Geotextile Cushion	203,400 SF
	Geotextile Separator	216,000 SF
	Tie into Existing	1,005 LF
	Rain Cover	264,568 SF
	45 mil R-Polypropylene	16,783 SF
Continental Teves	60 mil HD	7,940 SF
Fletcher, NC	45 mil Polypropylene	12,721 SF
Secondary Containment Pond		
Richmond, VA	60 mil HDPE Texture	10,725 SF
Truck Stops of America		
Bloomsbury, NJ	Aluminum Battening	196 LF
Peppertree Resorts	40 mil HDPE-texture	9,316 SF
Lightfoot, VA	Pipe Boots	5 EA
	Anchor Trench	212 LF
	30 mil PVC	2,116 SF
Sump Liner, Ashland	Geocomposite	1,680 SF
Ashland, VA	Amoco 4551 Fabric	1,800 SF
	Claymax 200R	85,450 SF
Commonwealth Center	Bentomat ST	149,251 SF
Chesterfield, VA	60 mil HDPE-smooth	52,941 SF
Georgia Pacific, Phase 1 Cell 3	60 mil HDPE-texture	72,242 SF
Big Island, VA	Composite	71,700 SF
	Trevira 1135	117,125 SF
	XR-5	1,972 SF
Pit Liner, DE Industrial park		
Wilmington, DE	Amoco 2002	4,200 SY
Fuel Oil Tank Liner	80 mil Hyperflex	16,010 SF
Remington, VA	Batten	616 EA
	1.5" Pipe Boots	16 EA
	12 mil rain Cover	150,000 SF
King & Queen Landfill Rain Cover		
King & Queen, VA	6 mil Duraskrim	262,800 SF
Allied Waste Rain cover		
Lawrenceville, VA	30 mil PVC	3,282 SF

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Cherry Hill-Sand Filter Manheim, PA	Repair 40 mil VFPE	
Bedford County Landfill. Bedford, VA	Geotextile	58,156 SF
Norfolk Southern Fuel Tank Containment Chattanooga, TN	Tuff Track 60 mil HDPE-smooth	390 LF 569,488 SF
Shoosmith Brothers Chesterfield, VA	Amoco 4508 40 mil HDPE-texture	569,490 SF 15,510 SF
Wareham's Pond Williamsburg, VA	40 mil HDPE Liner	13,189 SF
Wareham's Nice & Sons Williamsburg, VA	60 mil HDPE-smooth	93,667 SF
Lighthouse Sound WWTP Ocean City, MD	Amoco 4512 30 mil LDPE	93,667 SF 5,700 SF
Boy Scouts Camp Olmstead Goshen, VA	60 mil HDPE-smooth	127,744 SF
Bear Island Paper Company Ashland, VA	60 mil HDPE-texture Amoco 4506 60 mil HDPE-Texture	15,415 SF 143,159 SF 179,343 SF
Potomac Landfill cell 1 Dumfries, VA	10 oz. Geotextile 40 mil HDPE	179,343 SF 203,688 SF
Glasgow Chester Co., PA	60 mil HDPE Smooth	470,076 SF
Clayton County Landfill Clayton County, GA	60 mil HDPE Textured Tie-In To Existing Liner 45 mil Reinforced Polypropylene Cushion Geotextile	118,482 SF 3,630 LF 12,253 SF 12,253 SF
Candor Hosiery Robbins, NC	6 mil Duraskrim	440,000 SF
Allied Waste Cell 3 Rain Cover Lawrenceville, VA	60 mil HDPE	30,250 SF
Allied Waste Leachate Pond Lawrenceville, VA	60 mil Drain Liner	232,305 SF
Dalecarlia WTP Washington, DC	Amoco 4506 60 mil HDPE	232,305 SF 81,875 SF
Allen Family Foods Lagoon Harbenson, DE	Bentomat ST., GCL	18,435 SF
Simpson Meadows Downingtown, PA	XR-5 Material	25,760 SF
N.S. Louisville, KY Louisville, KY	Amoco 4510 60 mil Geomembrane	25,760 SF 163,004 SF
Bristol Quarry Landfill Bristol, VA	Protective Geotextile Geotextile 60 mil HDPE Text	175,638 SF 184,184 SF 391,360 SF
Albemarle Landfill Albemarle, NC	60 oz Geotextile 60 mil HDPE-smooth	391,360 SF 890,024 SF
CRSWM-New Bern New Bern, NC	GCL Bentomat ST 80 mil HDPE	7,056 SF 1,800 SF
Laughlin-Sutton construction		

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New Bern, NC	Xr-5 Liner	48,204 SF
N.S. Atlanta, GA	10 oz Geotextile	36,000 SF
Atlanta, GA	40 mil LLDPE	27,300 SF
Augusta Leache Pond Repair	Single Composite	27,300 SF
Augusta, VA	4" PVC Pipe	
	Cap Strip	447 SF
	Pipe Boots	
	Removal Existing Liner	27,300 SF
	Tie in to Existing Liner	711 SF
	60 mil HDPE-textured	552,120 SF
Hanes Landfill	GCL Bentomat ST	446,000 SF
Winston Salem, NC	Comtrac	2,800 SY
Onslow Co., Change Order		
Onslow County, NC	Comtrac	5,659 SY
Onslow County		
Onslow County, NC	12 mil Rain Cover	205,600 SF
Petersburg Landfill		
Petersburg, VA	60 mil HDPE	2,720 SF
Tank 1001 Secondary Containment	Aluminum Batten	189 LF
Norfolk, VA	8oz. Nonwoven Geotextile	2,720 SF
	20 mil PVC	42,641 SF
Carlisle at Lantana		
West Palm Beach, FL	Bentomat	49,900 SF
Rt. 228 VDOT #295 964		
Fairfax County, VA	40 mil HDPE Installed	1,380 SF
Trench Liner	Batten Anchor System	72 LF
King of Prussia, PA	40 mil Material Only	3,100 SF
	Installation only	10,000 SF
Secondary Containment Liner	60 mill HDPE	
Newell. WV	XR-5 8130	39,807 SF
N.S. Fuel Oil Containment		
Macon, VA	Comtrac 770	124 SF
Coastal Flood Damage		
Littleton, MA	80 mill HDPE	5,400 SF
Amital Spining	Amoco 4553	600 SY
New Bern, NC	XR-5 8138	13,015 SF
Oil Secondary Containment Dike Lining		
Avon Park, FL	Amoco 2044	85,300 SF
Genco Ash Monofil		
Washington TWSP, PA	16 oz Geotextile	18,411 SF
VEPCO Chesapeake Plant	60 mil HDPE-Text	
Chesapeake, VA	40 mil HDPE-Textured	37,904 SF
Great Valley Middle	40 mil HDPE-smooth	102,000 SF
Chester Co, PA	40 mil LLDPE	22,000 SF
Carroll Co.-Rubble Cell R-2	Geocomposite	22,000 SF
Westminster, MD		
Springfield Road Landfill	60 mil HDPE Smooth	431,600 SF
Richmond, VA	Tie-in Cap Strip	950 LF
	6" Pipe Boot	2 EA
	30 mil PVC	57,118 SF
Island Walk Pond Liner	Aluminum Batten	275 SF
Naples, FL	Boots	3 SF

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	XR-5 8130	79,058 SF
N.S. Fuel Oil Containment Birmingham, AL	60 mil HDPE	360,000 SF
Shoosmith Brothers Chester, VA	Amoco 4508	360,000 SF
	Amoco 4504	44,000 SF
	Comtrac 350	22,800 SF
Rt 17 Barnhill Contracting Jacksonville, NC.	Comtrac 770	73,000 SF
Sanitary Landfill Liner Westmoreland, PA	Comtrac 90.90	25,004 SF
		14,400 SF
Potomac Supply Kinsale, NC	100 mil HDPE	
	60 mil HDPE	
ITT Automotive Culpepper, VA		
Oily Waste Water Treatment Plant	32 mil Poly propylene	
Coopers Deck Liner Hopewell, VA		
Oily WWTP Tanks Craney Island, VA	Bentomat ST	87,290 SF
Sand Filter Liner Burlington, NC	40 mil HDPE	1,650 SF
Norfolk Southern Norfolk, VA	XR - 5 8130	19,490 SF
Ft. Eustis Pond Liner Prefab Ft. Eustis, VA	12" VLDPE pipe boots	12 EA
GCL Pond Liner Roanoke, VA	Bentomat ST	20,000 SF
Mannington Mills Lexington, NC	40 mil VLDPE	93,000 SF
Bristol Quarry Landfill Bristol, VA	60 mil HDPE - Textured	130,425 SF
Norfolk Southern Bluefield, VA	XR - 5	22,500 SF
Williamsburg Brewery St. Martin Caribbean	40 mil Ultraflex	58,500 SF
	45 mil PPE reinforced	16,800 SF
GM Moraine Assembly Plant Moraine, Ohio	80 mil HDPE Geomembrane	9,700 SF
Allied Waste Rain Cover Lawrenceville, VA	Duraskrim 6 BB	348,480 SF
	Tape	10,000 LF
Flying "J" Travel Plaza Winchester, VA	Duraskrim 12 BB	4,290 SF
Lagoon Liner Fairview, NC	30 mil PVC	4,224 SF
Lagoon Topsail , NC	30 mil PVC	5,030 SF

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Pisgah Wildlife Retaining Pond Transylvania County , NC	30 mil HDPE 30 mil PVC	20,020 SF 4,808 SF
Allied Signal Pond Relining Hopewell, VA	45 mil reinforced polypropylene 100 mill HDPE 60 mil HDPE	53,400 SF 12,005 SF 10,510 SF
Richmond E Fuel Hopewell, VA		
Georgia Pacific Leachate Holding Pond Biggs Island, VA	Geotextile	10,510 SF
Petersburg Landfill Petersburg, VA	20 mil PVC	29,710 SF
Dequene Energy E-Fuel Pond Roanoke Rapids, NC	100 HDPE	23,669 SF
Buckingham Landfill Buckingham Co. VA	60 mil LLDPE Ceocomposite Clay Liner Drainage Geocomposite Gas Vent geocomposite	69,666 SF 69,666 SF 69,666 SF 69,666 SF
Norfolk Southern- Williamson Williamson, WV	XR-5 8130 10oz Geotextile 2' x2' Sump Liner 3" Round Pipe Penetration Boots Aluminum Batten	9,052 SF 8,000 SF 1 ea 10 ea 624 LF
ITT Automotive Henderson, NC	45 mil PPE	26,000 SF
Allen Family Foods Cordova, MD	60 mil HDPE	204,256 SF
O'Connell Center Gainesville, Fl	60 mil HDPE- white Composite Liner Protection Liner 6 mil Reinforced Secondary Containment 20 mil Reinforced Polyethylene -white	23,040 SF 18,924 SF 23,040 SF 71,010 SF
Rain Cover Lawrenceville, VA	Duraskrim 6BB	348,160 SF
Ultra Systems Western AltaVista, VA. **Hopewell Landfill Closure** Hopewell, VA.	HDPE 60 mil Amoco 4553 40 mil VLT Amoco 4510 Jdrain 200 N	125,000 SF 125,000 SF 654,000 SF 657,000 SF 21,000 SF
Roxbury WWTP Charles City , VA	Hypalon 36 mil	54,000 SF
Cogentrix Richmond, VA	40 mil HDPE 36 mil Hypalon Amoco 4512 SS Battening	125,000 SF 250,000 SF 310,000 SF 2,600 LF
Nokesville WWTP Nokesville, VA	HDPE 60 mil	31,500 SF
Hanover County Landfill Hanover, VA.	60 mil textured	2,000 SF
King William County Landfill King William County, VA.	60 mil textured HDPE 60 mil	80,000 SF 45,000 SF
Loudon County Landfill Leesburg, VA.	Amoco 4561	90,000 SF

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Ash Landfill Placement Berkeley, WV	PVC 50 Trivera H25 PN3000	90,000 SF 400,000 SF 180,000 SF
Sludge Drying Bed at the Industrial WWTP Washington, DC	Bentomat Petroguard 1 Liner	89,000 SF 333 SF
Cherry Hill Alexandria, VA.	VLDPE 40 mil Amoco 4554 HDPE 40 mil	27,000 SF 50,000 SF 44,000 SF
Delaware Technology Park Newark, DE.	Amoco 4553	50,000 SF
Shoosmith Brothers Landfill Chester, VA.	HDPE 60 mil Amoco 4553	270,000 SF 297,000 SF
Lugoff WWTP Lugoff, SC	HDPE 40 mil Amoco 4551	85,000 SF 85,000 SF
Vint Hill Farms Station Warrenton, VA.	Hypalon 36 mil Trivera 1145	11,000 SF 7,500 SF
Ashburn Village Lake 3A & #B Ashbum, VA.	30 mil PVC	65,000 SF
Mishe-Mokwa Dam Project Mishe-Mokwa, NJ	HDPE 60 mil textured	3,500 SF
Little Bennet Golf Course Frederick, MD	VLDPE 40 mil Amoco 2006	300,000 SF 300,000 SF
George Abell Marbury, MD	PVC 20 mil	16,000 SF
Berkshire Square Mall Basin Redding, PA.	PVC 30 mil	67,000 SF
Pocahontas County Landfill Marlinton, WV	60 mil HDPE JDR 200N Geonet Bentomat	90,000 SF 45,000 SF 45,000 SF
Quarantine Road Landfill Baltimore, MD.	HDPE 40 mil	90,000 SF
Cranie Island Ring Walls Portsmouth, VA	HDPE 40 mil	76,000 SF
Shoosmith Brothers Cell 6 Chester, VA	HDPE 60 mil Amoco 4553	230,000 SF 230,000 SF
FT. Eustis Landfill Closure Ft. Eustis , VA.	VLDPE 40 mil J Drain 200 N Amoco 4508	3,300,000 SF 3,300,000 SF 3,300,000 SF
Howes Leather Bartow, WV	HDPE 40 mil	202,000 SF
Private Residence New Hope, PA	VLDPE 60 textured HDPE 36 mil	37,000 SF 126,000 SF
Emporia WWTP Lagoons Emporia, VA.		
Fort A P Hill Fort A P Hill, VA.	Hypalon 36 mil	17,000 SF

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Roanoke Valley Cogeneration Plant Weldon, NC	HDPE 60 mil	232,000 SF
Loudon County Landfill Leesburg, VA	VLDPE 40 mil Textured	856,000 SF
Raymark Site Hatboro, PA.	VLDPE 40 mil Textured Geocomposite	31,000 SF 15,000 SF
Sussex Sanitary Landfill Waverly, VA.	VLDPE 60 mil Texture	670 SF
Smith Gap Landfill Ironto, VA.	Geocomposite	154,000 SF
Wolf Pen GOB Pile Hurley, VA	HDPE 30 mil	113,000 SF
Clifton Substation Clifton, VA.	XR - 5 8130	27,000 SF
Loudon Landfill Addition Leesburg, VA.	HDPE 60 mil Textured	5,400 SF
Wor Wic Community College Salisbury, MD	HDPE 40 mil Textured	76,000 SF
Petersburg Landfill Leachate Line Petersburg, VA.	HDPE 60 mil Claymax	11,000 SF 16,500 SF
First Piedmont Chatham, VA.	HDPE 60 mil Claymax	31,000 SF 30,810 SF
Vale Summit Landfill Vale Summit, NC.	HDPE 60 mil Claymax 200 mil Geonet	594,000 SF 132,000 SF 594,000 SF
Little Creek Naval Base Little Creek, VA.	Hypalon 36 mil	2,500 SF
Eden Square Shopping Center New Castle, DE.	PVC	56,000 SF
Stormwater Ponds for I 66 Widening Manassas, VA.	Claymax GCL	2,600,001 SF
Shoosmith Brothers Cell 10 Chester, VA.	HDPE 60 mil Textured HDPE 60 mil Amoco 4508	108,000 SF 175,000 SF 266,000 SF
Landfill Closure Cap Upgrade	VLDPE 40 mil Geocomposite	167,000 SF 137,000 SF
Secondary Containment Cape Charles, VA.	Claymax 500 sp	2,920 SF
Dupont Landfill Closure Marlinsville, VA.	VLDPE 40 mil Geonet 200n Amoco 4508	46,244 SF 46,244 SF 5,138 SF
Macoby WWTP Pennsburg, VA	HDPE 60 mil	14,168 SF
Secondary Containment, VA power Richmond, VA	XR - 5	1,936 SF
Dixie Caverns Roanoke, VA	HDPE 60 mil Amoco 4510	164,281 SF 257,792 SF

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Floyd County Landfill Floyd, VA.	PVC 30 mil Amoco 4510	255,637 SF 498,292 SF
Nicholas County Landfill Nicholas County, WV.	60 mil HDT 40 mil HDT Tensar Geotextile	139,000 SF 22,181 SF 124,700 SF 30,000 SF
Ft. Benning Landfill 13 Ft. Benning, GA.	40 mil HD 40 mil HDT Geocomposite Claymax Fabric Geonet	1,686,649 SF 885,704 SF 872,995 SF 2,637 SF 1,852,743 SF 1,745,486 SF
Harwoods Mill Repair Newport News, VA	60 mil HDT 60 mil HD Claymax Geocomposite Gunlock	5,918 SF 5,835 SF 5,840 SF 5,793 SF 288 LF
B I Old Dominion Landfill Sandston, VA.	Geotextile	87,645 SF
Wake County Landfill Raleigh, NC	Tensar 4205	1,075,543 SF
Ivy Sanitary Landfill Alleghany, VA.	40 mil VLDPER Geocompostie 40 mil HDPE	477,300 SF 931,800 SF 13,500 SF
John Owings Landfill Westminster, MD	40 mil Text LLDPE Jdrain 200 FNF	121,450 SF 121,450 SF
Rappahanock County Landfill Rappahanock, VA.	60 mil HD 60 mil HDT Amoco 4510 Geonet	117,840 SF 68,762 SF 275,244 SF 65,763 SF
Doe River Gorge Hampton, TN	40 mil HD 40 mil HDT Amoco 4508 SS Batten 60 mil HDT	70,987 SF 4,358 SF 9,300 SF 109 LF 2,761 SF
Newgate Site Baltimore, MD	60 mil HD	4,174 SF
ITT Automotive Culpepper, VA.	SS Batten	371 LF
Sussex Sanitary Landfill Waverly,VA.	60 mil HDPE 60 mil HDPE Geonet Genet/Geotextile	670,000 SF 2,500,000 SF 2,500,000 SF 570,000 SF
Shoosmith Brothers LF Cell 7 Chester, VA	60 mil HDPE Amoco 4508	270,000 SF 214,902 SF
James R. Olin Flood Control Project Buena Vista, VA.	40 mil VLDPE	95,000 SF
Southampton WWTP and Plumbing Southampton, VA.	60 mil HDPE textured Batten 60 mil Textured	270,000 SF 154 SF 9,240 SF
Substation at Tasley Tasley, VA.	Claymax 60 mil HDPE	14,600 SF 1,300 SF

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Delaware Solid Waste Authority Georgetown, DE.	60 mil HD Textured Geocomposite Gundseal Geonet	2,200,000 SF 2,200,000 SF 1,100,000 SF 30,000 SF
Jacksonville Landfill Jacksonville, FL.	30 mi PVC Geonet Geotextile	470,000 SF 470,000 SF 470,000 SF
Cove Landfill Bad Axe, MI	Geomembrane	8,554 SF
Pepco Coal Pile SW Basin Morgantown, MD	60 mil HDPE Amoco 4516	69,406 SF 51,600 SF
Morrison Cove WWTp Morresville, NC	30 mil PVC	28,065 SF
Corral Farm Landfill Warrenton, VA.	60 mil HDT Amoco 4510 60 mil HDT GCL Clay liner	200,500 SF 200,500 SF 79,254 SF 39,627 SF
Hypalon Pond Liner Repair Richmond, VA.	36 mil Hypalon	930 SF
Diplomat Golf Course	30 mil HDPE	80,000 SF
Wor Wic Community College Salisbury, MD.	40 mil HDPE Claymax GCL	76,000 SF 46,000 SF
Amherst Water Treatment Amherst, VA	60 mil HD 8 oz. geotextile Batten	6,865 SF 6,865 SF
5502 Toddsbury Rd Basement Richmond, VA.	XR - 8130 Amoco 4516	600 SF 1,200 SF
Leo Gerrel's Pond Danville, VA.	30 mil PVC	7,500 SF
Georgia Pacific Landfill Big Island, VA.	60 mil HDPE 60 mil HDPE Geocomposite Geotextile Flap	140,000 SF 28,800 SF 28,800 SF 284,620 SF 7,200 SF
Pisgah Landfill La Plata, MD	VFPE 40 mil VFPE 40 mil Text.	2,150,000 SF 1,242,000 SF
B.I. Chemicals Pond Liner Petersburg, VA.	60 mi HDPE Smooth Amoco 4506 Battening	40,600 SF 21,000 SF 65 SF
Head Grating Goldboro, NC	XR - 5	16,303 SF
Peak Hollow Peak Hollow, VA.	Claymax	11,952 SF
Augusta Landfill Staunton, VA.	60 mil HDPE textured Amoco 4512 40 mil LDPE	66,670 SF 66,670 SF 66,670 SF
Delmarva Properties New Kent, VA	60 mil HD Geotextile Drainage net	42,800 SF 42,800 SF 38,280 SF

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Pioneer Crossing Landfill Birdsboro, PA.	60 mil HD Super Grip 6 oz. nonwoven geotextile	692,650 SF 692,650 SF
RT. 228 Fairfax Fairfax Co., VA.	Bentomat	
White Oak Semiconductor - Baker Sandston, VA.	40 mil HDPE 40 mil HDPE SS Batten	43,200 SF 7,500 SF 172 LF
West Point WWTP West Point, VA.	32 mil Polypropylene	25,864 SF
Deerfield Pond Liner Newark, DE.	Claymax 600 SP	28,985 SF
Brooke County Landfill Colliers, WV	60 mil HDPE 60 mil HDPE	125,985 SF 141,750 SF
Marietta Sands Jacksonville, FL	40 mil HDPE	74,000 SF
Secondary Containment Rocky Mount, VA	60 mil HDPE smooth Composite 40 mil HDPE	19,603 SF 20,800 SF 3,000 SF
White Oak Semiconductor -Century Sandston, VA.	40 mil HDPE	7,500 SF
White Oak Semiconductor- SB Ballard Richmond, VA.	45 mil PPE	54,000 SF
Itt Automotive Henderson, NC	60 mil HDPE SS Batten Poly lock	12,320 SF 360 LF 310 LF
RGC Minerals Stoney Creek, VA.	60 mil HD 60 mil HDT	63,960 SF 3,960 SF
White Oak Substation Sandston, Va	XR - 5 8130 Geomembrane Batten	4,500 SF 136 LS
White Oak Semi Conductor Sandston, Va.	40 mil HDPE T Lock	7,100 SF 550 LF
Patuxent River NAS Patuxent River, MD	XR - 5 8130	2,852 SF
Rustberg WWTP Campbell Co. VA	60 mil HDPE Composite W/ 4506	14,985 SF 14,985 SF
Norfolk Southern Roanoke, VA	8130 XR - 5	18,298 SF
	TOTAL:	**108,699,119 SF**

Landsaver Environmental
Geosynthetic Installation Professionals

Monday, August 13, 2007

Jerry Resnik
Compass Environmental, Inc
92 North Main Street
Unit 20 B
Windsor NJ 08561

Regarding: Personnel for Former Sinclair Refinery

Dear Jerry Resnik,

The following personnel is tentatively scheduled to work on this project:

1. David Mark Tilley	Project Manager
Voay Navarro 2. ~~John Alan Walker~~	Superintendent
3. Jane Walker	QC
4. Ismael Torres	Master Seamer
5. Grant Martin	Technician
6. Rafael Vasquez	Technician
7. Siomar Moran	Technician
8. Vincent Six	Technician
9. Various Laborers	Estimated 4-5 people

Additional personnel might be deployed to this project at a later date. Please see attached resumes of the above listed persons. Feel free to contact me with any questions.

Please contact me with any questions.

Sincerely
Jule Mueller

Project Administrator
Phone: 804-275-4173
Email: Jule@Landsaver.net

David Mark Tilley
Project Manager
Start Date: August 2006- Present
Project Name/Location

Job Name & Location	Material:	Qty:	Unit:
2007			
BASF Repair 3340 West Norfolk Road, Portsmouth VA 23703	Repair		
Southern Nash Middle School 5301 South N.C. 581, Spring Hope NC 27882	30 Mil HDPE Smooth Batten AL 12' OC Pipe Boots	6,253 380 4	SF LF Each
Rowe Pond 206 Pullets Place, Nellysford VA 22958	36 Mil RPP Pipe Boots	9,125 2	SF Each
Elmont Substation RT623, Atlee VA	XR-5 8 oz GeoTextile Batten SS 6 OC Pipeboots	14,106 25,777 246 21	SF SF LF Each
Perdido LF Section 4 13009 Beula Road, Cantonment FL 32533	60 Mil HDPE Textured GeoNet GCL Single-sided Composite 8 oz Geotextile Rain Cover	1,187,685 528,701 520,192 510,268 156,595 336,171	SF SF SF SF SF SF
Surry Power Station 5570 Hog Island Road, Surry County VA 23883	XR-5 8130 Batten	3,700 75	SF LF
Seagull Stadium 1350 Wayne Street, Salisbury MD 21801	30 Mil HDPE Smooth 8 oz Non-woven Geotextile	7,800 108,000	SF SF
Warrenton Toyota Route 29, Warrenton VA 20186	30 Mil PVC 8 oz Geotextile Pipe boots	11,367 22,500 8	SF SF Each
Boiling AFB Repair #2 110 Luke Avenue Bldg 5681, Washington DC	60 mil HDPE	Repair	
Resicon-Braintree-Weymouth Pump Station Quincy MA		Repair	
Eastern Divirsified Metals Change Order 02 Township Road 922, Hometown PA 18252	40 Mil HDPE Textured	81	SF
Co-Gentrix 5001 Commerce Road, Richmond VA 23234	40 Mil HDPE Black/White 16 oz GeoTextile Batten SS	1,435 2,147 88	SF SF LF

Appomatox County LF State Route 632, Appomattox VA 24522	60 Mil HDPE Textured	Repair	
Charles City Landfill Repair 8000 Chambers Road, Charles City VA 23030		Repair	
Norfolk Naval Base Tank CEP-11 Norfolk Naval Base, Norfolk VA 23511	XR-5 8130 16 oz Non-woven Geotextile Batten		16,991 SF 16,458 SF 733 LF
Birchwood Power Station 10900 Birchwood Drive, King George VA 22485	80 Mil HDPE 16 oz GeoTextile	Repair	
NED Power Station HC76 Box 380R, Mount Storm WV 26739	XR-5 Batten		4,032 SF 328 LF
Livingston LF 6241 Massey Road, Spotsylvania VA 22553	60 Mil HDPE Textured	Repair	
Co-Gentrix 5001 Commerce Road, Richmond VA 23234	40 Mil HDPE Black/White 8 oz GeoTextile Batten SS		1,500 SF 1,500 SF 120 LF
Bridges over Buffalo Creek HHY 81 -2 Miles South of RT 60 Instersection, Lexington VA 24450	30 Mil PVC Batten		30,106 SF 57 LF
Evershire Subdivision Intersection of Hopeman PKWY & State RT 254, Waynesboro VA 22980	Bentofix GCL NW		23,400 SF
Rivanna WTP Scottsville Lagoon 1 & 2 633 James River Road, Scottsville VA 24590	45 Mil RPP 16 oz Geotextile Batten Pipe Boots		10,465 SF 10,465 SF 204 LF 7 Each
Rivanna WTP Crozet Lagoon 2 3 Notched Road, Crozet VA 22932	45 Mil RPP 16 oz Geotextile Batten Pipe Boots		7,876 SF 6,720 SF 112 LF 4 Each
Lehigh Cement Company Repair 675 Quaker Hill Road, Union Bridge MD 21791	40 Mil White HDPE Textured	Repair	
Boiling AFB Repair 110 Luke Avenue Bldg 5681, Washington DC	40 mil HDPE	Repair	
Pocahontas Prison Detention Ponds 920 Old River Road, Bluefield VA 24605	40 Mil HDPE Smooth 8 oz Geotextile Batten		40,793 SF 40,793 SF 100 LF
Wave Pool 1985 Princess Anne Road, Virginia Beach VA 23456	40 Mil HDPE Smooth		8,681 SF
Bear Island Paper Repair 10026 Old Ridge Road, Ashland VA 23005	60 Mil HDPE	Repair	
Goldsboro Repair 500 Gateway Drive, Goldsboro NC 27534	No Material	Repair	

Detention Ponds
RT1 & Easy Street, Port St. Lucie FL 34994

30 Mil PVC	39,594 SF

M. C. Dean Cut-off wall Basin 1 & 2
Spratt Road, Carmel Church VA 22546

30 Mil PVC	10,588 SF

Honeywell Repair
4000 Bermuda Hundred Road

45 Mil RPP	Repair

SPSA Landfill Cell Closure I-IV Phase IV
1 Bob Foeller Drive, Suffolk VA 23434

40 Mil LLDPE Textured	1,429,324 SF
Double-sided Composite	1,433,966 SF

New Georgia LF Phase 1 Change Order 01 & 02 Tank
2500 47th Ave, Birmingham AL 35217

60 Mil HDPE MicroSpike	15,533 SF

Old Dominion LF Repair
2100 Charles City Road, Richmond VA 23231

DuraSkrim	Repair

New Georgia LF Phase 1
2500 47th Ave, Birmingham AL 35217

60 Mil HDPE MicroSpike	485,874 SF
GCL	485874 SF

Duke Power Substation
Pleasant Green Road, Durham NC 27705

HDPE	Repair

Norfolk Southern Railway
1550 Marietta Road, Atlanta GA 30318

XR-5 (Reinforced & Unreinforced	Repair

Bethlehem Lot 3 Pond 4 OPUS East
Brodhead Road, Bethlehem PA 18020

30 Mil PVC	52,509 SF
Batten Attachment	16 LF

Williamsburg Dodge/Norge Neighborhood
7101 Richmond Road, Williamsburg VA 23188

30 Mil PVC	17,196 SF
Batten Attachment	16 LF

2006

Cluster Springs Sand Filter
7091 Huell Matthews Hwy, Alton VA 25520

40 Mil HDPE Smooth	7,442 SF
Pipe Penetrations	4 Each

Brunswick LF Rain Cover
107 Mallard Crossing Road, Lawrenceville VA 23868

8 Mill Duraskrim	240,260 SF

Rockbridge LF
231 Landfill Road, Buena Vista VA 24416

Double-sided GeoComposite	800,643 SF
30 Mil PVC Pipeboots	19 Each

Howard Hughes Medical Institute
19710 Janelia Farm Blvd, Ashburn VA 20147

Bentomate ST GCL	140,000 SF
30 Mil PVC	119,990 SF
12 oz Geotextile	140,000 SF

Berkeley Gateway Phase 1
Intersection RT 901 & Rt 11, Berkeley Springs WV 25401

30 Mil PVC	73,500 SF

Re-use Lake @ Tesoro
3302 South Bend Blvd, Port St. Lucie FL 34984

40 Mil Smooth HDPE	79,988 SF
40 Mil Textured HDPE	93,308 SF

A.D. Davis
1120 3rd Street, St. Augustine FL 32095

30 Mil HDPE	15,392 SF

ALCOA Eastalcoa Industrial Landfill
5601 Manor Woods Road, Frederick MD 21703

D16WB Duraskrim	142,268 SF
16 oz. Geotextile	143,299 SF
8 oz. Geotextile	144,743 SF

King George Landfill Cell 13 10376 Bullock Drive, King George VA 22485	8 BBR Duraskrim		294,100 SF
Bethel LF 100 N Park Lane, Hampton VA 23666	60 Mil HDPE	Repair	
North Cross Center Phase 2 Ashland VA	D16WB Duraskrim		8,200 SF
Austin Quarter LF 2701 Austin Quarters Road, Graham NC 27253		Repair	
The Virginian Golf Course 22512 Clubhouse Ridge, Bristol VA 24202	30 Mil PVC		18,893 SF
Mountain View LF Leachate Diversion Cap 13300 New Georges Creek, Frostburg MD 21532	8 Mil Duraskrim		130,800 SF
Gaston Copper Infiltration Basin 700 Southbound Road, Gaston SC 29053	36 Mil Reinforced Polypropelyne 6" diameter Sandtube Weights		37,405 SF 1,530 LF
Wabash Alloys Tipton 841 S. 550 West, Tipton IN 46072	45 Mil RPP		13,416 SF
Bonita Cove FL Jacksonville FL	30 Mil PVC		130,164 SF
McGlothlin Residence 20489 Carson Road, Bristol VA 24201	40 mil Smooth LLDPE 10 oz non-woven Geotextile		113,232 SF 113,232 SF
Bristol Ponds TN 470 Industrial Park Road, Piney Flats, TN 37686	60 Mil HDPE Batten SS 6 OC		18,484 SF 8 LF
Northen Middle School 616 Spencer-Dixon Road, SummerField NC 27455	40 Mil HDPE 30 Mil PVC		26,877 SF 7,275 SF
Knowles Place- Windsong Corner of Glenridge Way & General Reese Road, Winter Park FL 32789	40 Mil Textured HDPE Batten		33,706 SF 48 LF
King George Landfill Cell 13 10376 Bullock Drive, King George VA 22485	8 BBR Duraskrim		294,100 SF
Shoosmith Sanitary LF Cell 23 11800 Lewis Road, Chester VA 23831	60 Mil Microspike HDPE Double sided Composite Bentomat GCL ST		620,779 SF 632,194 SF 622,835 SF
	TOTAL:		**12,902,794 SF**

John Alan Walker
Superintendent
Employed Since April 2006

Recent Projects: 2006-Present

Project Name/Location Job Name & Location	Material:	Qty:	Unit:
Perdido LF Section 4 13009 Beula Road, Cantonment FL 32533	60 Mil HDPE Textured	1,187,685	SF
	GeoNet	528,701	SF
	GCL	520,192	SF
	Single-sided Composite	510,268	SF
	8 oz Geotextile	156,595	SF
	Rain Cover	336,171	SF
New Georgia LF Phase 1 2500 47th Ave, Birmingham AL 35217	60 Mil HDPE MicroSpike	485,874	SF
	GCL	485874	SF
Rockbridge County Landfill 231 Landfill Road, Buena Vista VA 24416	Doublesided Geocomposite	831,740	SF
	30 Mil PVC Pipeboots	36	Each
Gaston Copper Infiltration Basin 700 Southbound Road, Gaston SC 29053	36 Mil Reinforced Polypropelyne	37,405	SF
	6" diameter Sandtube Weights	1,530	LF
Mountain View LF Leachate Diviersion Cap 13300 New Georges Creek, Frostburg MD 21532	8 Mil Duraskrim	130,800	SF
McGlothlin Residence 20489 Carson Lane, Bristol VA 24201	40 Mil Smooth LLDPE	102,650	SF
	10 oz Geotextile	102,650	SF
Garrett County LF phase 2, 3 & Change orders	60 mil HDPE	325,771	SF
3118 Oakland-Sang Run Road, Oakland, MD 21550	GCL Bentomat	347,380	SF
	16 oz nonwoven Geotextile	355,768	SF
VDOT SMW Ponds 170 Parkersburg Turnpike, Staunton VA 24401 Phase 1 and 2	GCL Bentomat ST Super Groove	290,426	SF
Paseo Irrigation Lake 8201 Penzance Blcd, Fort Myers FL 33912	30 Mil PVC	286,222	SF
	Biodrain- FabriNet	286,222	SF
Aberdeem Cut-Off Wall Roberts Road, St. Augustine, FL	30 mil PVC	10,608	SF
Durbin Crossing Phase 2 St. Augustine FL	30 mil PVC	20,780	SF
Bolling AFB 110 Luke Avenue Bldg 5681, Washington DC	40 mil HDPE	27,633	SF
TOTAL:		7,368,981	SF

Partial Job Experience List

Employee: Alan Walker (JOHN)

Position: Supervisor

Date	Project Name	Project Location	Material	Square Feet
1987	Fort Howard Paper	Rincon, GA	40 HD	2,000,000
1987	Kaiser Metals	Chalmette, LA	40 HD	750,000
1987	Galactic Resources	Summitville, CO	60 HD	1,000,000
1988	Fort Howard Paper	Rincon, GA	40 HD	1,500,000
1988	Loudon County Landfill	Leesburg, VA	30 HD	680,000
1988	Roosevelt National Park	Belfield, ND	40 HD	78,000
1988	Laidlaw Waste Systems	Oklahoma City, OK	60 HD	220,000
1988	Fort Howard Paper	Rincon, GA	40 HD	245,000
1988	Silver King Mines	Ely, NV	60 HD	700,000
1988	Royal Mtn. King Gold Mine	Copperopolis, CA	40 VL	600,000
1989	Echo Bay Gold Mine	Battle Mountain, NV	30 VL	9,153,000
1989	UMTRAP	Rifle, CO	40 HD	420,000
1989	Cyprus Speciality Metals	Keokuk, IA	30 HD	300,000
1989	TWA	Kansas City, MO	40 VL	250,000
1989	Mother Lode Mine	Beatty, NV	60 HD	680,000
1989	Denton Rawhide Mine	Fallon, NV	80 HD	1,500,000
1989	International Metals Corp.	Morgantown, KY	60 HD	750,000
1989	Ely Prison	Ely, NV	60 HD	90,000
1990	Kiawa Island Golf Course	Kiawa Island, SC	30 VL	140,000
1990	Compu Systems	Columbia, SC	40 VL	90,000
1990	General Smelting	Franklin, TN	60 HD	157,000
1990	Southern Mills	Senoia, GA	40 HD	189,000
1990	Crowder's Creek	Gastonia, NC	60 HD	135,000
1990	Eagle Pitcher Remediation	Quapaw, OK	60 HD	440,000
1990	Traxler Development Co.	Pinconning, MI	60 HD	300,000
1990	Addington Corp.	Ashland, KY	40 HD	99,000
1991	Chevron Oil	Tampa, FL	80 HD	12,000
1991	Chevron Oil	Port Everglades, FL	80 HD	10,000
1991	Tillman Ridge Landfill	St. Lucie City, FL	60 HD	482,000

1991	Chesser Island	Folkston, GA	60 HD	178,000
1991	Duke Power	Durham, NC	60 HD	3,600
1991	Marigold Mining	Valmy, NV	40 VL	393,000
1991	City of Temple	Temple, GA	60 HD	145,000
1991	Collenton River Plantation	Hilton Head, SC	30 VL	520,000
1991	Legends Golf Course	Franklin, TN	40 VL	95,000
1991	Glen Lilly Road Landfill	Bowling Green, KY	60 HD	1,350,000
1991	TU Electric	Mt. Pleasant, TX	60 HD	144,000
1992	Texaco Pipeline	McPherson, KS	60 HD	378,000
1992	Collum Lumber	Allendale, SC	60 HD	15,000
1992	Fort Howard Paper	Rincon, GA	40 HD	920,000
1992	Envo Tech	Litchfield, IL	60 HD	300,000
1992	Timber Pines Golf Course	Brooksville, FL	40 HD	108,000
1992	Perdido Landfill	Cantonment, FL	60 HD	400,000
1992	City of Bartlesville	Bartlesville, OK	40 HD	220,000
1993	Babylon Northern "U" LF	Long Island, NY	60 HD**	720,000
1993	Fort Howard Paper	Rincon, GA	40 HD	750,000
1993	Franklin County Landfill	Malone, NY	60 HD****	800,000
1993	Ellery Landfill	Jamestown, NY	60 HD**	1,100,000
1994	Dade County South	Miami, FL	60 HD	2,300,000
1994	Combefill Landfill	Chester, NJ	40 VL	1,200,000
1994	B 3 Residue Cell	Harrisburg, PA	100 HD***	500,000
1994	Owensboro Landfill	Beaver Dam, KY	60 HD	236,500
1995	Mt. Pleasant Landfill	Mt. Pleasant, TX	60 HD	108,000
1995	Sullivan County Landfill	Monticello, NY	40 LLT	702,000
Mar. 95	Chanute Landfill	Chanute, KS	60 HD*	489,000
1995	Caroga Landfill	Caroga, NY	40 LL	350,000
1995	Altamont Landfill Closure	Altamont, NY	40-60 VLHD	1,345,450
1995	Lake George Landfill	Lake George, NY	40 HD	609,500
1995	10th Street Superfund	OK City, OK	30 LL	115,100
1996	Bergstrom AFB - Cells 3 & 4	Austin, TX	60 LL	998,500
1996	Bergstrom AFB - Cell 6	Austin, TX	60 LL	343,000
1996	Bergstrom AFB - Cell 7	Austin, TX	60 LL*	613,000
1996	Sidney Landfill	Sidney, NE	60 HD*	215,000
1996	Lee County Landfill - Phase 2	Felda, FL	60 HD	707,300
1997	Perdido Landfill	Cantonment, FL	60 HD	336,500

Jun. 98	Murphy Family Farms	Laverne, OK	40 HD	74,675
Aug. 98	Outagamie County Landfill	Appleton, WI	60*	419,000
Sep. 98	Salina Landfill	Salina, KS	60 HD	501,500
Oct. 98	Fayette County Landfill	Fayette, IA	60 HD	81,300
Jul. 99	Bluff Road LF	Lincoln, NE	40 HDT	557,600
Jul. 99	Roberta Landfill	Oneida, TN	60 HD	68,725
Oct. 99	Pirkey Power Plant	Hallsville, TX	100 & 60 HDW	909,000
Oct. 99	Sallisaw Landfill	Sallisaw, OK	60 HD	244,000
Oct. 99	McAlester Landfill	McAlester, OK	60 HD	130,000
Apr. 00	Tinker AFB LF Cap	Midwest City, OK	40 VL	219,400
Apr.00	NCRA Tank	McPherson, KS	100 HD	9,045
May. 00	N.E. Nebraska Regional Landfill	Norfolk, NE	60 HD*	511,240
Jun. 00	Shunga Pump Station	Topeka, KS	30 HD	2,140
Jun. 00	GM Fairfax Plant Pond	Kansas City, KS	40 HDT	54,000
Jun. 00	Hamm Sanitary Landfill	Perry, KS	60 HD	327,900
Jun. 00	Tower Metals	Ft. Scott, KS	60 HD	48,560
Sep. 00	Otoe County Landfill	Nebraska City, NE	40 HD*	965,500
Sep. 00	Harrison County Landfill	Logan, IA	60 HD*	173,270
Oct. 00	Welsh Power Plant	Pittsburg, TX	100HD/60HD	987,700
Jul. 01	Weldon Spring WP547	St. Charles, MO	80 HDTW	1,009,000
Sep. 01	Chenault Reservoir	Benton, AR	40 HD	1,938,000
Sep. 01	Morrilton Landfill	Morrilton, AR	60 HD*	249,400
Oct. 01	Corsicana Regional Landfill	Corsicana, TX	60 HD*	310,800
Oct. 01	Dolet Hills Power Plant	Mansfield, LA	100 HDW	53,200
Nov. 01	Central NE Power Canal E65	Holdredge, NE	80 HD	566,850
Mar. 02	NE Mississippi Regional LF	Walnut, MS	60 HDT	122,500
Mar. 02	Port Arthur Landfill	Port Arthur, TX	60 HD*	506,150
Mar. 02	Ada Landfill Phase 2	Ada, OK	60 HD*	206,317
May. 02	NEARSWMD Unit 3-6 Phase 3	Paragould, AR	60 HDT	287,972
Jun. 02	Bixby North Lagoon Expansion	Bixby, OK	60 HDT	272,630
Aug. 02	Columbia Landfill	Columbia, MO	60 HDT	411,500
Aug. 02	Springfield Landfill	Springfield, MO	60 HDT	150,600
Sept. 02	Roberts County Landfil	Sisseton, SD	40 VFT	132,500
Sept. 02	City of Sallisaw Landfill	Sallisaw, OK	60 HD	264,890
Oct. 02	McAlester Landfill	McAlester, OK	60 HD	120,729
Jan. 03	Harvey County Landfill	Newton, KS	40 HD*	1,464,400

May. 03	NWIRP Unit 4 Closure	McGregor, TX	40 LD	167,800
May. 03	Ponca City Landfill	Ponca City, OK	60 HD	99,000
Jun. 03	Hulbert WWTP	Hulbert, OK	40 HD	79,800
Jul. 03	City of Marshall WWTP	Marshall, TX	60 HD	140,625
Aug. 03	American Environmental LF	Sand Springs, OK	60 HD*	478,000
Sept. 03	Marathon County LF	Ringle, WI	60 HD*	344,880
Nov. 03	Seneca WWTP	Seneca, KS	40 HD*	811,295
Dec. 03	Tishomingo Fish Hatchery	Tishomingo, OK	60 HDT	76,200
Apr. 04	RLH Landfill	Mountain Home, AR	60 HD	173,657
Apr. 04	Highland Springs Country Club	Springfield, MO	60 HD	50,718
May. 04	GP & E Lagoon	Brownwood, TX	40 HD	82,524
Aug. 04	Upper SW Arkansas Reg LF.	Nashville, AR	60 HD	236,769
Sept. 04	Hayti WWSI	Hayti, MO	60 HD	154,771
Sept. 04	Tangipahoa Parish Landfill	Amite, LA	60 HDT Gund.	208,515
Oct. 04	Kluthe Holding Pond	Dodge, NE	40 HD	138,123
Oct. 04	Sarpy County Landfill	Springfield, NE	60 HD*	538,194
Oct. 04	Sevier County Landfill, cell 4A	Pigeon Forge, TN	40 VFT	281,439
Dec. 04	Tower Metal Products, cell 2	Ft. Scott, KS	40 HD*	113,557
Feb. 05	Sallisaw Landfill	Sallisaw, OK	60 HD	257,401
Mar. 05	Mitchell Feed Lot Lagoon	Mitchell, NE	40 HD*	127,343
Apr. 05	Holcomb WWTP	Holcomb, MO	60 HD	73,129
May. 05	Durant Settling Basin	Durant, OK	60 HD	21,865
Jun. 05	Tangipahoa Parish Landfill	Amite, LA	60 HDT	316,998
Jul. 05	Georges Food Processing	Butterfield, MO	60 HD	89,673
Jul. 05	Enid Landfill	Enid, OK	60 HD	233,547
Aug. 05	Roberts Cattle Co Holding Pond	Lexington, NE	40 HD*	577,168
Oct. 05	Ft. Smith Landfill	Fort Smith, AR	60 HD*	602,727
Oct. 05	Logan WWTP	Logan, KS	40 HDT	193,047
Nov. 05	Craighead County Landfill	Jonesboro, AR	60 HD	261,112
			Total S.F. =	63,960,320

* = Smooth and Textured.

** = Smooth and Textured. One half of the square footage of the job is Bentomat GCL.

*** = One half of the square footage of the job is Claymax GCL.

* **= One half of the square footage of the job is Bentomat GCL.

Jane Walker
QC
Employed Since April 2006

Recent Projects: 2006-Present

Project Name/Location

Job Name & Location	Material:	Qty:	Unit:
Perdido LF Section 4 13009 Beula Road, Cantonment FL 32533	60 Mil HDPE Textured	1,187,685	SF
	GeoNet	528,701	SF
	GCL	520,192	SF
	Single-sided Composite	510,268	SF
	8 oz Geotextile	156,595	SF
	Rain Cover	336,171	SF
New Georgia LF Phase 1 2500 47th Ave, Birmingham AL 35217	60 Mil HDPE MicroSpike	485,874	SF
	GCL	485874	SF
Rockbridge County Landfill 231 Landfill Road, Buena Vista VA 24416	Doublesided Geocomposite	831,740	SF
	30 Mil PVC Pipeboots	36	Each
Gaston Copper Infiltration Basin 700 Southbound Road, Gaston SC 29053	36 Mil Reinforced Polypropelyne	37,405	SF
	6" diameter Sandtube Weights	1,530	LF
Mountain View LF Leachate Diviersion Cap 13300 New Georges Creek, Frostburg MD 21532	8 Mil Duraskrim	130,800	SF
McGlothlin Residence 20489 Carson Lane, Bristol VA 24201	40 Mil Smooth LLDPE	102,650	SF
	10 oz Geotextile	102,650	SF
Garrett County LF phase 2, 3 & Change orders 3118 Oakland-Sang Run Road, Oakland, MD 21550	60 mil HDPE	325,771	SF
	GCL Bentomat	347,380	SF
	16 oz nonwoven Geotextile	355,768	SF
VDOT SMW Ponds 170 Parkersburg Turnpike, Staunton VA 24401 Phase 1 and 2	GCL Bentomat ST Super Groove	290,426	SF
Paseo Irrigation Lake 8201 Penzance Blcd, Fort Myers FL 33912	30 Mil PVC	286,222	SF
	Biodrain- FabriNet	286,222	SF
Aberdeem Cut-Off Wall Roberts Road, St. Augustine, FL	30 mil PVC	10,608	SF
Durbin Crossing Phase 2 St. Augustine FL	30 mil PVC	20,780	SF
Bolling AFB 110 Luke Avenue Bldg 5681, Washington DC	40 mil HDPE	27,633	SF
TOTAL:		7,368,981	SF

Partial Job Experience List

Employee: Jane Walker

Position: QA Technician

Date	Project Name	Project Location	Material	Square Feet
1990	Geo Con/Eagle Pitcher	Quapaw, OK	60 HD	440,000
1991	Tillman Ridge Landfill	St. Lucie City, FL	60 HD	482,000
1991	Chesser Island	Folkston, GA	60 HD	178,000
1991	City of Temple	Temple, GA	60 HD	145,000
1991	Collenton River Plantation	Hilton Head, SC	30 VL	520,000
1991	Legends Golf Course	Franklin, TN	40 VL *	95,000
1991	Glen Lilly Road Landfill	Bowling Green, KY	60 HD	1,350,000
1991	TU Electric	Mt. Pleasant, TX	60 HD	144,000
1992	Texaco Pipeline	McPherson, KS	60 HD	378,000
1992	Collum Lumber	Allendale, SC	60 HD	15,000
1992	Fort Howard Paper	Rincon, GA	40 HD	920,000
1992	Envo Tech	Litchfield, IL	60 HD	300,000
1992	Timber Pines Golf Course	Brooksville, FL	40 HD	108,000
1992	City of Bartlesville	Bartlesville, OK	40 HD	220,000
1992	Perdido Landfill	Pensacola, FL	60 HD	400,000
1993	Fort Howard Paper	Rincon, GA	40 HD	750,000
1993	Franklin County Landfill	Malone, NY	60 HD*	800,000
1993	Ellery Landfill	Jamestown, NY	60 HD**	1,100,000
1994	Dade County South	Miami, FL	60 HD	2,300,000
1994	Combefill Landfill	Chester, NJ	40 VL	1,200,000
1994	B 3 Residue Cell	Harrisburg, PN	100 HD***	500,000
1994	Owensboro Landfill	Beaver Dam, KY	60 HD	236,500
1995	Mt. Pleasant Landfill	Mt. Pleasant, TX	60 HD	108,000
1995	Sullivan County Landfill	Monticello, NY	40 LLT	702,000
1995	Caroga Landfill	Caroga, NY	40 LL	350,000
Mar. 95	Chanute Landfill	Chanute, KS	60 HD*	489,000
1995	Altamont Landfill Closure	Altamont, NY	40-60VL,HD	1,345,450
1995	Lake George Landfill	Lake George, NY	40 HD	609,500
1995	10th Street Superfund	OK City, OK	30 LL	115,100
1996	Bergstrom AFB - Cells 3 & 4	Austin, TX	60 LL	998,500
1996	Bergstrom AFB - Cell 7	Austin, TX	60 LL	343,000

1996	Bergstrom AFB - Cell 6	Austin, TX	60 LL*	613,000
1996	Sidney Landfill	Sidney, NE	60 HD*	215,000
1996	Lee County Landfill - Phase 2	Ft. Myers, FL	60 HD	707,300
1997	Perdido Landfill	Perdido, FL	60 HD	336,500
1997	Weldon Springs	St. Charles, Mo.	80 HDT	1,500,000
1998	Outagamie County Landfill	Appleton, WI	60*	419,000
1998	Salina Landfill	Salina, KS	60	501,500
Jun. 98	Murphy Family Farms	Laverne, OK	40 HD	74,675
Oct. 98	Fayette County Landfill	Fayette, IA	60 HD	81,300
Jul. 99	Bluff Road LF	Lincoln, NE	40 HDT	557,600
Jul. 99	Roberta Landfill	Oneida, TN	60 HD	68,725
Oct. 99	Pirkey Power Plant	Hallsville, TX	100 & 60 HDW	909,000
Oct. 99	Sallisaw Landfill	Sallisaw, OK	60 HD	244,000
Oct. 99	McAlester Landfill	McAlester, OK	60 HD	130,000
Apr. 00	Tinker AFB LF Cap	Midwest City, OK	40 VL	219,400
Apr.00	NCRA Tank	McPherson, KS	100 HD	9,045
May. 00	N.E. Nebraska Regional LF	Norfolk, NE	60 HD*	511,240
Jun. 00	Shunga Pump Station	Topeka, KS	30 HD	2,140
Jun. 00	GM Fairfax Plant Pond	Kansas City, KS	40 HDT	54,000
Jun. 00	Hamm Sanitary LF	Perry, KS	60 HD	327,900
Jun. 00	Tower Metals	Ft. Scott, KS	60 HD	48,560
Sept. 00	Otoe County LF	Nebraska City, NE	40 HD*	965,500
Sept. 00	Harrison County LF	Logan, IA	60 HD*	173,270
Oct. 00	Welsh Power Plant	Pittsburg, TX	100HD/60HD	987,700
Jul. 01	Weldon Springs WP547	St. Charles, MO	80 HDTW	1,009,000
Sep. 01	Chenault Reservoir	Benton, AR	40 HD	1,938,000
Sep. 01	Morrilton Landfill	Morrilton, AR	60 HD*	249,400
Oct. 01	Corsicana Regional LF	Corsicana, TX	60 HD*	310,800
Oct. 01	Dolet Hills Power Plant	Mansfield, LA	100 HDW	53,200
Nov. 01	Central NE Power Canal E65	Holdredge, NE	80 HD	566,850
Mar. 02	Port Arthur Landfill	Port Arthur, TX	60 HD*	506,150
Mar. 02	Ada Landfill Phase 2	Ada, OK	60 HD*	206,317
May. 02	NEARSWMD Unit 3-6 Phase 3	Paragould, AR	60 HDT	287,972
Jun. 02	Bixby North Lagoon Expansion	Bixby, OK	60 HDT	272,630
Aug. 02	Springfield Landfill	Springfield, MO	60 HDT	150,600
Sept. 02	Roberts County Landfil	Sisseton, SD	40 VFT	132,500

Sept. 02	City of Sallisaw Landfill	Sallisaw, OK	60 HD	264,890
Oct. 02	McAlester Landfill	McAlester, OK	60 HD	120,729
Jan. 03	Harvey County Landfill	Newton, KS	40 HD*	1,464,400
May. 03	NWIRP Unit 4 Closure	McGregor, TX	40 LD	167,800
May. 03	Ponca City Landfill	Ponca City, OK	60 HD	99,000
Jun. 03	Hulbert WWTP	Hulbert, OK	40 HD	79,800
Jul. 03	City of Marshall WWTP	Marshall, TX	60 HD	140,625
Aug. 03	American Environmental LF	Sand Springs, OK	60 HD*	478,000
Sept. 03	Marathon County LF	Ringle, WI	60 HD*	344,880
Oct. 03	Mar-Oco Landfill	Marinette County, WI	40 HD	99,420
Nov. 03	Seneca WWTP	Seneca, KS	40 HD*	811,295
Dec. 03	Tishomingo Fish Hatchery	Tishomingo, OK	60 HDT	76,200
Apr. 04	RLH Landfill	Mountain Home, AR	60 HD	173,657
Apr. 04	Highland Springs Country Club	Springfield, MO	60 HD	50,718
May. 04	GP & E Lagoon	Brownwood, TX	40 HD	82,524
Aug. 04	Upper SW Arkansas Reg LF.	Nashville, AR	60 HD	236,769
Sept. 04	Hayti WWSI	Hayti, MO	60 HD	154,771
Sept. 04	Tangipahoa Parish Landfill	Amite, LA	60 HDT Gund.	208,515
Oct. 04	Kluthe Holding Pond	Dodge, NE	40 HD	138,123
Oct. 04	Sarpy County Landfill	Springfield, NE	60 HD*	538,194
Oct. 04	Sevier County Landfill, cell 4A	Pigeon Forge, TN	40 VFT	281,439
Dec. 04	Tower Metal Products, cell 2	Ft. Scott, KS	40 HD*	113,557
Feb. 05	Sallisaw Landfill	Sallisaw, OK	60 HD	257,401
Mar. 05	Mitchell Feed Lot Lagoon	Mitchell, NE	40 HD*	127,343
Apr. 05	Holcomb WWTP	Holcomb, MO	60 HD	73,129
May. 05	Durant Settling Basin	Durant, OK	60 HD	21,865
Jun. 05	Tangipahoa Parish Landfill	Amite, LA	60 HDT	316,998
Jul. 05	Georges Food Processing	Butterfield, MO	60 HD	89,673
Jul. 05	Enid Landfill	Enid, OK	60 HD	233,547
Aug. 05	Roberts Cattle Co Holding Pond	Lexington, NE	40 HD*	577,168
Oct. 05	Ft. Smith Landfill	Fort Smith, AR	60 HD*	602,727
Oct. 05	Logan WWTP	Logan, KS	40 HDT	193,047
Nov. 05	Craighead County Landfill	Jonesboro, AR	60 HD	261,112
			Total S.F. =	41,406,981

* = Smooth and Textured

** = Smooth and Textured. One half of the square footage of the job is GCL.

Ismael Torres
Master Seamer
Employed Since August 2003

Recent Projects: 2006 - 2007

Project Name/Location

Job Name & Location	Material:	Qty:	Unit:
Perdido LF Section 4 13009 Beula Road, Cantonment FL 32533	60 Mil HDPE Textured	1,187,685	SF
	GeoNet	528,701	SF
	GCL	520,192	SF
	Single-sided Composite	510,268	SF
	8 oz Geotextile	156,595	SF
	Rain Cover	336,171	SF
Mann LF Phase 2 30895 King Willaim Road, West Point VA 23181	60Mil HDPE Textured	333,214	SF
	Double Sided-Composite	640,251	SF
	Pipe Boots	4	Each
New Georgia LF Phase 1 2500 47th Ave, Birmingham AL 35217	60 Mil HDPE MicroSpike	485,874	SF
	GCL	485874	SF
Rockbridge County Landfill 231 Landfill Road, Buena Vista VA 24416	Doublesided Geocomposite	800,644	SF
Gaston Copper Infiltration Basin 700 Southbound Road, Gaston SC 29053	36 Mil Reinforced Polypropelyne	37,405	SF
	6" diameter Sandtube Weights	1,530	LF
Mountain View LF Leachate Diviersion Cap 13300 New Georges Creek, Frostburg MD 21532	8 Mil Duraskrim	130,800	SF
McGlothlin Residence 20489 Carson Lane, Bristol VA 24201	40 Mil Smooth LLDPE	102,650	SF
	10 oz Geotextile	102,650	SF
Tesoro Re-use/Irrigation Pond 3302 SE Southbend Blvd, Port St. Lucie FL 34984	40 Mil HDPE	159,900	SF
VDOT SMW Ponds 170 Parkersburg Turnpike, Staunton VA 24401 All 3 phases	GCL Bentomat ST Super Groove	290,426	SF
Howard Hughes Medical Center 19710 Janelia Farm Blvd, Ashburn VA 20147	GCl Bentomat ST	121,756	SF
	12 oz Geotextile	121,756	SF
Paseo Irrigation Lake 8201 Penzance Blcd, Fort Myers FL 33912	30 Mil PVC	286,222	SF
	Biodrain- FabriNet	286,222	SF
Aberdeem Cut-Off Wall Roberts Road, St. Augustine, FL	30 mil PVC	10,608	SF
Durbin Crossing Phase 1 St. Augustine FL	30 mil PVC	20,780	SF
Meadow Dam/Primeland Resort Busted Rock Road Stuart, VA 24171	Bentomat CL/GCL	17,400	SF
Charles City Odor Control Repair 8000 Chambers Road, Charles City VA	40 Mil Smooth LLDPE	1,470	SF
	24 oz Geotextile	1,540	SF
Wellville Substation Foundation Blackstone VA	RUFCO 3000 B	720	SF
Naval Surface Warfare Center Dahlgren VA	XR-5	400	SF
	10 oz Non-woven Geotextile	13,500	SF
TOTAL:		7,693,208	SF

Grant Martin
Technician
Employed Since April 2007

Recent Projects:2007

Project Name/Location Job Name & Location	Material:	Qty:	Unit:
Perdido LF Section 4 13009 Beula Road, Cantonment FL 32533	60 Mil HDPE Textured	1,187,685	SF
	GeoNet	528,701	SF
	GCL	520,192	SF
	Single-sided Composite	510,268	SF
	8 oz Geotextile	156,595	SF
	Rain Cover	336,171	SF
Mann LF Phase 2 30895 King Willaim Road, West Point VA 23181	60Mil HDPE Textured	333,214	SF
	Double Sided-Composite	640,251	SF
	Pipe Boots	4	Each
TOTAL:		4,213,081	SF

Rafael Vasquez
Technician
Employed Since May 2007

Recent Projects: 2007

Project Name/Location

Job Name & Location	Material:	Qty:	Unit:
Perdido LF Section 4 13009 Beula Road, Cantonment FL 32533	60 Mil HDPE Textured	1,187,685	SF
	GeoNet	528,701	SF
	GCL	520,192	SF
	Single-sided Composite	510,268	SF
	8 oz Geotextile	156,595	SF
	Rain Cover	336,171	SF
Mann LF Phase 2 30895 King Willaim Road, West Point VA 23181	60Mil HDPE Textured	333,214	SF
	Double Sided-Composite	640,251	SF
	Pipe Boots	4	Each
Co-Gentrix 5001 Commerce Road, Richmond VA 23234	40 Mil HDPE Black/White	1,435	SF
	16 oz GeoTextile	2,147	SF
	Batten SS	88	LF
Charles City Landfill Repair 8000 Chambers Road, Charles City VA 23030		Repair	
NED Power Station HC76 Box 380R, Mount Storm WV 26739	XR-5	4,032	SF
	Batten	328	LF
Mann LF Phase 1 30895 King Willaim Road, West Point VA 23181	60Mil HDPE Textured	238,508	SF
	Double Sided-Composite	448,995	SF
TOTAL:		4,908,614	SF

Siomar Moran
Technician
Employed Since April 2007

Recent Projects: 2007

Project Name/Location

Job Name & Location	Material:	Qty:	Unit:
Perdido LF Section 4 13009 Beula Road, Cantonment FL 32533	60 Mil HDPE Textured	1,187,685	SF
	GeoNet	528,701	SF
	GCL	520,192	SF
	Single-sided Composite	510,268	SF
	8 oz Geotextile	156,595	SF
	Rain Cover	336,171	SF
Mann LF Phase 2 30895 King Willaim Road, West Point VA 23181	60Mil HDPE Textured	333,214	SF
	Double Sided-Composite	640,251	SF
	Pipe Boots	4	Each
Co-Gentrix 5001 Commerce Road, Richmond VA 23234	40 Mil HDPE Black/White	1,435	SF
	16 oz GeoTextile	2,147	SF
	Batten SS	88	LF
Charles City Landfill Repair 8000 Chambers Road, Charles City VA 23030		Repair	
Birchwood Power Station 10900 Birchwood Drive, King George VA 22485	80 Mil HDPE	Repair	
	16 oz GeoTextile		
Norfolk Naval Base Tank CEP-11 Norfolk Naval Base, Norfolk VA 23511	XR-5 8130	16,991	SF
	16 oz Non-woven Geotextile	16,458	SF
	Batten	733	LF
Mann LF Phase 1 30895 King Willaim Road, West Point VA 23181	60Mil HDPE Textured	238,508	SF
	Double Sided-Composite	448,995	SF
TOTAL:		4,938,436	SF

Vincent Six
Technician
Employed Since April 2007

Recent Projects:2007

Project Name/Location

Job Name & Location	Material:	Qty:	Unit:
Perdido LF Section 4 13009 Beula Road, Cantonment FL 32533	60 Mil HDPE Textured	1,187,685	SF
	GeoNet	528,701	SF
	GCL	520,192	SF
	Single-sided Composite	510,268	SF
	8 oz Geotextile	156,595	SF
	Rain Cover	336,171	SF
Mann LF Phase 2 30895 King Willaim Road, West Point VA 23181	60Mil HDPE Textured	333,214	SF
	Double Sided-Composite	640,251	SF
	Pipe Boots	4	Each
TOTAL:		4,213,081	SF

Installation Schedule for Former Sinclair Refinery

Mobilization	1 day
Onsite Safety Orientation	8 hours
Sedimentation Pond	3 days
Surface Flow Wetlands	8 days
Vertical Flow Wetlands	5 days
Sludge Dewatering Beds	4 days

This schedule is an estimate only. Depending upon the site conditions and surface preparation of the ponds, the schedule is subject to change. Please see Subgrade requirements under Conditions of out Proposal.

Sales & Support
Toll Free
888-324-WELD
Mon-Fri 8am-6pm PST

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The Demtech Pro-Wedge XL

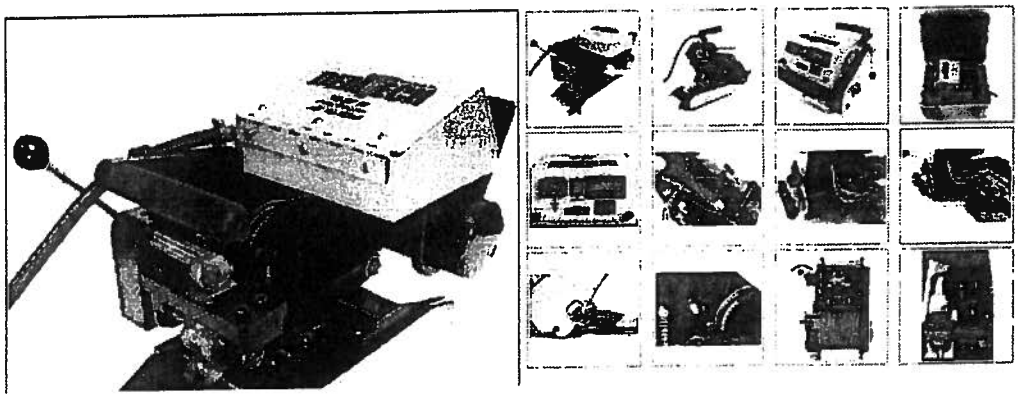
The PRO-Wedge XL, Model 500-0100XL/A Wedge Welder, manufactured by DEMTECH Services, Inc., is the new standard of the industry wedge welder for production welding HDPE geomembrane seams. Drawing from many years of experience in the plastic welding industry, we've designed features and functions into its design to satisfy the needs of the most demanding welding technicians on the most demanding job sites.

Here are just a few of the many exclusive features that make the PRO-Wedge XL the heavy duty welder of choice for thick and/or textured PE materials:

Pro-Wedge XL Features

All common spare parts are completely interchangeable with a Wedge-It Series 2000 welder including the following:

- Wedge Assembly
- Gears & Sprockets
- Shafts and Bearings
- Nip Rollers, Chains
- Contour Roller Assemblies
- Temperature Controller
- Motor Control Board
- Solid State Relay
- Speed Readout



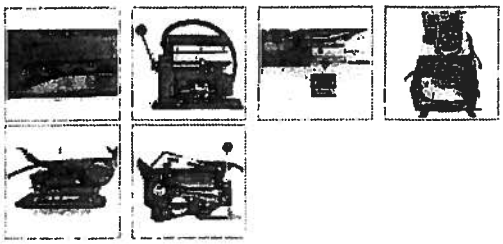
International Association of Geosynthetics Installers

Industrial Fabrics Association International

PVC Geomembrane Institute

Try Our Image Zoom, Click Above

Pro-Wedge XL product photo



Technical Specifications

Model Number : 500-0100XL/A
Weight (welder only) : 52 lbs. (23.5 kilos)
Shipping Weight : 66 lbs. (30 kilos)
Dimensions (welder only) : 16"x11"x12" (40.6 x 28 x 30 cm)
Material Range : HDPE, LLDPE
Welding Range : 40-120 mil (1.0-3.0mm)
Operating Voltage : 110-250 VAC (Auto Switching)
Power Consumption : 1400W, 6-13 Amps
Packaging : Sturdy molded case w/foam insert

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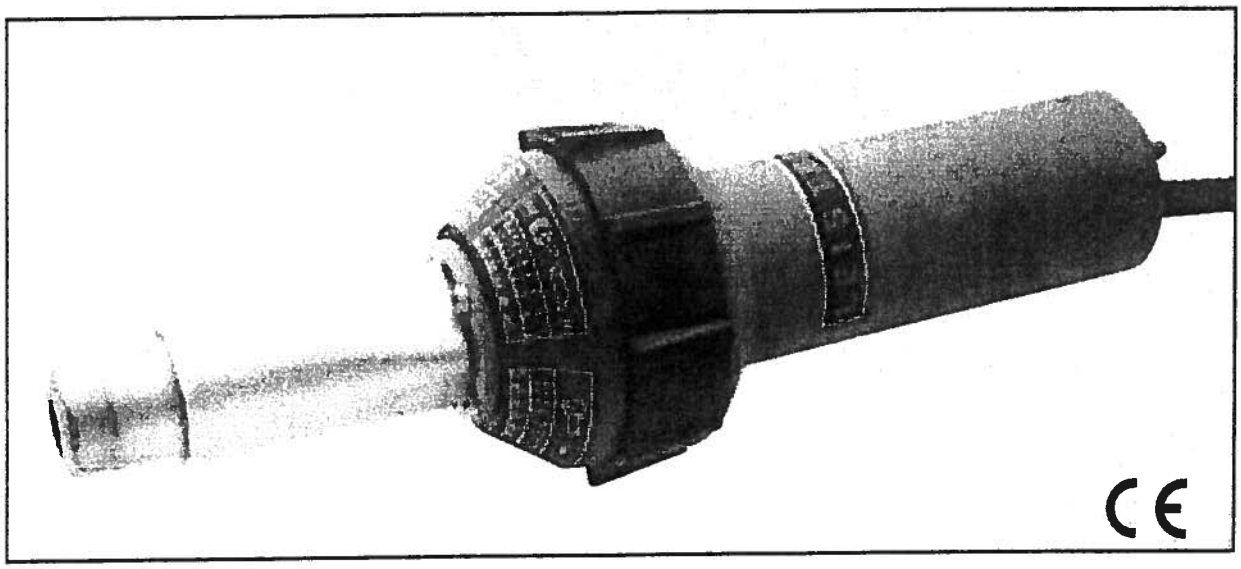
LEISTER Triac S ⧈
Hot Air Blower

Read operating instructions carefully before use and keep it for further reference.

APPLICATION

- **Welding** of thermoplastic materials as well as single-ply flexible plastics and modified bitumen in the form of boards, tubes, profiles, lining membranes, coated materials, films, foams, tiles, and sheets. The following procedures are possible: overlap welding, welding with rod, with tape, butt welding and melt welding
- **Heating-up** for forming, bending and sealing of thermoplastic semi-finished materials and plastic granules
- **Drying** of water-damp surfaces
- **Shrinking** of heat-shrink sleeves, films, tapes, solder sleeves, pre formd and moulded parts
- **Soldering** of copper pipes, solder joints and metal foils
- **Defrosting** of frozen water pipes
- **Activating/dissolving** of solvent free adhesives and fusion adhesives
- **Igniting** of wood shavings, paper, coal or straw in furnaces



LEISTER Process Technologies, Riedstrasse, CH-6060 Sarnen/Switzerland
Tel. +41 41 662 74 74 Fax +41 41 662 74 16 www.leister.com sales@leister.com

WARNING

Danger to life when opening the tool as live components and connections are exposed. Unplug the tool before opening it.

Incorrect use of hot-air blowers can cause **fire and explosion hazard**, especially near combustible materials and explosive gases.

Do not touch heater tube and nozzle when they are hot. They may cause **burns**. Let the tool cool down. Do not point hot-air flow in the direction of people or animals.

CAUTION

The **voltage rating** stated on the tool must correspond to the line/mains voltage.

For personal protection on building sites we **strongly recommend** the tool be connected to a **GFCI** (**G**round **F**ault **C**ircuit **I**nterrupter) or a **RCCB** (**R**esidual **C**urrent **C**ircuit **B**reaker).

The tool must be operated **with supervision**. Heat can reach combustible materials, which are out of sight.
Store the tool indoors when not in use - out of the reach of children.

Protect tool from **damp** and **wet**.

APPROVAL MARKS

This tool is **CCA** certified (**C**ENELEC **C**ertification **A**greement).

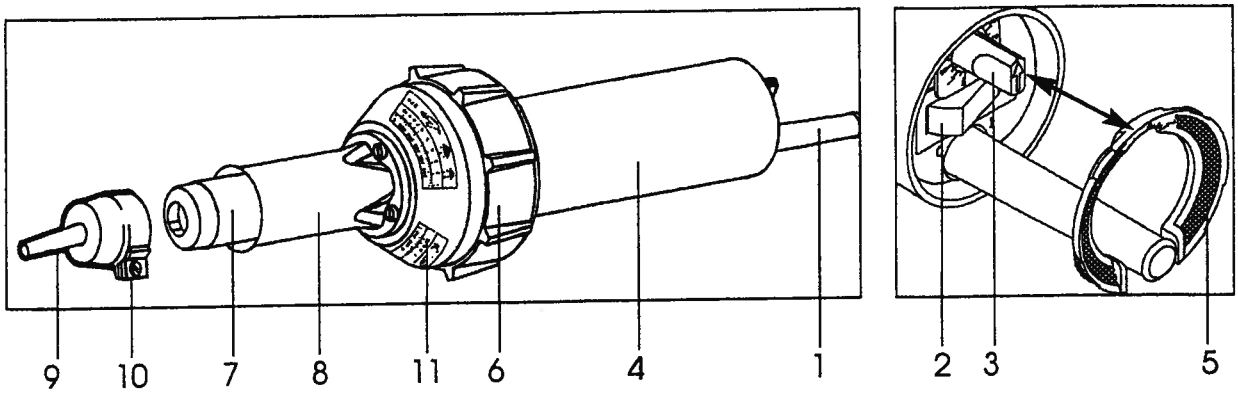
TECHNICAL DATA

Electrical safety: ⧈ **double insulated**

Voltage	**V~**	42, 100, 120, 200, 230, 50/60 Hz
Power consumption	**W**	1000, 1400, 1600, 1400, 1600
Temperature	**°C**	20 – 700, infinitely controlled
Air flow	**l/min.**	max. 230
Air pressure	**Pa**	3000 (30 mbar) after about 24 h operating time
Weight	**kg**	1,3 with 3m cord
Size	**mm**	ø 100 x 330 Handle ø 56

Line/mains voltage can not be switched over

Description of the tool



1. Power supply cord
2. Main switch
3. Potentiometer for temperature adjustment
4. Handle
5. Air filter
6. Rubber stand
7. Adapter tube
8. Heat protection tube
9. Nozzle (not included)
10. Screw on the clamp
11. Temperature scale

Readiness for working

- Fit appropriate nozzle as required.
- Connect tool to the line/mains.
- Adjust hot air temperature, provisional standard values see **temperature scale (11)**, with **potentiometer (3).**
- Switch on **main switch (2)** and heat up the tool for approximately 5 minutes.

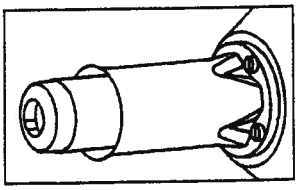
Operation

- The LEISTER company as well as the Service Centers offer free training courses and advice in all areas of application (see page 1).
- Carry out a test weld in accordance with the material manufacturer's welding instructions and national guidelines or regulations.
- Check the test weld.
- Set welding temperature (welding parameter) as required.
- Cool down the tool after use.

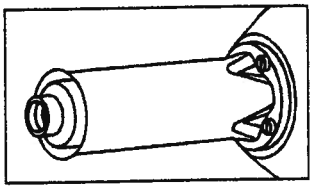
Change of nozzles

- Before changing nozzles cool down the tool or use only pliers/wrench.
- Do not touch hot **nozzle (9)** and make sure to place it on a heat resistant surface, because of fire hazard.
- Push the **nozzle (9)** on the **adapter tube (7)** and secure the nozzle by the **screw on the clamp (10)**.
  Screw the **nozzle (9)** and secure by wrench.
- Use LEISTER nozzles only.

VERSIONS



Adapter tube with heat protection tube for LEISTER **push-fit nozzles**



Adapter tube with heat protection tube for LEISTER **screw-on nozzles**

ACCESSORIES

- Use LEISTER accessories only.

MAINTENANCE

- Clean polluted **air filter (5)** with a small brush or replace it.
- Clean welding nozzle with a steel brush.
- Check **mains cable (1)** and plug for electrical and mechanical damage.

SERVICE AND REPAIRS

- The motor switches off automatically when the brushes reach their minimum length. Have the tool checked by your Service Centre. The life of the brushes is about 1600 running hours of the welding tool's motor.
- Repairs should be carried out by authorised **LEISTER Service Centres** only. They guarantee a specialised and reliable **Repair Service within 24 hours** using original spare parts according to schematics and spare parts lists.

GUARANTEE AND LIABILITY

- Guarantee and liability are in accordance with the guarantee certificate as well as with the currently valid general business and sales conditions.
- LEISTER Process Technologies rejects any guarantee claims for tools which are not in their original condition. The tools must never be altered or changed.

Technical data and specifications are subject to change without prior notice.

Your authorised Service Centre is:

LEISTER Process Technologies, Riedstrasse, CH-6060 Sarnen / Switzerland
Tel. +41 41 662 74 74 Fax +41 41 662 74 16 www.leister.com sales@leister.com

SAMPLE

Effective Date: <Date of Demobilization>

LANDSAVER ENVIRONMENTAL INSTALLATION WARRANTY

LANDSAVER ENVIRONMENTAL ("LANDSAVER") hereby warrants to (and only to)(OWNER) ("Companies") that the _____ installed by LANDSAVER at the location described below.____ shall be installed free from defects and faults in workmanship, liner seams and in conformance with the Contract Documents applicable to LANDSAVER'S Work. The warranty set forth in the preceding sentence ("Installation Warranty") shall commence on the date that LANDSAVER COMMENCES PERFORMANCE AND, SHALL APPLY UNTIL THE LAST DAY OF PERIOD OF _____ years from the date LANDSAVER demobilizes the project, and shall be subject to the following conditions:

*1. The Installation Warranty shall not be effective unless LANDSAVER receives Companies' written claim therefore within 30 days after the date of discovery of such defect and within the warranty period. Said notice shall be sent by registered or certified U.S. mail, return receipt requested, and addressed to Landsaver Environmental, 2831 Cardwell Rd., Richmond, Va., 23234, Attention: Contracts Administration Department. The words **WARRANTY CLAIM** shall be clearly marked on the face of the envelope and the notice must contain, at a minimum, the name and address of the Companies (Warranty Holder); the name and address of the Installer, including the date of installation, and the facts or circumstances upon which the warranty claimed is based. After receipt of the foregoing notice, Landsaver shall notify the Companies that Landsaver's representative will inspect the lining, or that additional information is required from the Companies, or that the alleged claim is not covered by the Installation Warranty.*

Under no circumstances shall LANDSAVER have any liability for direct, indirect, incidental, specific or consequential damages of any kind or any loss of profits owing to the failure of the installation, whether such damages are for breach of warranty, negligence or otherwise. LANDSAVER neither assumes nor authorizes any person (other than an officer of LANDSAVER) to assume for it any other or additional liability in connection with the Lining or its installation. Any repairs, replacements or alterations made without LANDSAVER's written consent or any attempted assumption of any such liability will void this Installation Warranty.

2. The Installation Warranty is extended to Companies only and is non-transferable and non-assignable except with LANDSAVER's prior written consent. No rights against LANDSAVER shall be created by any attempted transfer or assignment, nor shall any rights against LANDSAVER survive any attempted transfer or assignment. This Warranty does not extended to any materials furnished or installed by others in connection with the intended use of the Lining.

3. No terms or conditions other than those stated herein and no agreement or understanding, oral or written, and no course of conduct or performance in any way purporting to modify this Installation Warranty or to waive LANDSAVER's rights hereunder shall be binding on LANDSAVER, unless the same shall be clearly described in written memorandum that expressly refers to the Installation Warranty and is separately signed by a duly-authorized officer of LANDSAVER. Moreover, additional liabilities of or limitations upon the rights and remedies of LANDSAVER contained in such documents as purchase orders, order acknowledgments or change orders which may subsequently be exchanged between the parties shall have no force or effect upon the Installation Warranty. All related proposals, negotiations and representations, if any, made prior to the date hereof or with reference hereto are merged herein.

4. LANDSAVER's obligations to perform under this Installation Warranty shall not be effective unless payment in full has been made to LANDSAVER for all labor, installation and other services provided under the terms of the original contract documents.

5. The federal laws and the dispute clause of the contract shall govern the rights and duties of the parties under this warranty.

THE FOREGOING INSTALLATION WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES (EXCEPT OF TITLE), EXPRESS, IMPLIED, OR STATUTORY. IN NO EVENT SHALL LANDSAVER ENVIRONMENTAL BE LIABLE FOR ANY LOSS OF PROFITS OR ANY OTHER INCIDENTAL, INDIRECT OR CONSEQUENTIAL LOSS RESULTING FROM ANY DEFECTS IN ITS WORKMANSHIP, INCLUDING WITHOUT LIMITATION IMPROPER INSTALLATION OF THE LINING.

LANDSAVER PROJECT NO.:
PROJECT LOCATION: <>.
DESCRIPTION OF INTENDED USE: <>
COMPANIES:
DATE: <Date of Demobilization>

LANDSAVER ENVIRONMENTAL
2831 Cardwell Rd
Richmond, VA 23234

*BY:*_____
Vice President of Construction

SAMPLE ONLY

LIMITED MATERIAL WARRANTY

PROJECT NAME: Former Sinclair Refinery Project
TYPE MATERIAL: 80 mil HDPE MicroSpike ®
LOCATION: Wellsville NY

The company, referred to herein as AGRU AMERICA, warrants thatAGRU AMERICA liners will correspond to the specifications as indicated in AGRU AMERICA technical records, catalogs, guidelines and test certificates at the time when sold.

AGRU AMERICA warrants that the material is faultless and resistant for a period ofone year (1), prorated from the point of time sold, when properly installed, covered, and used for: _____.

AGRU AMERICA's liability under this warranty is not applicable when damage is caused by:
Natural phenomena such as thunderstorms, floods, earthquakes, acts of war or other acts of God;
Chemicals, which are not suitable for HDPE liners according to chemical resistance guides or from experience.

Further, AGRU AMERICA is not liable for damages due to the misapplication, incorrect installation, anddamages resulting from any kind of inadequate handling. In the event that any defects are noticed in the liner, AGRU AMERICA must be notified in writing within thirty (30) days.

AGRU AMERICA shall be given an opportunity to ascertain the cause of damages AGRU AMERICA reserves the right to decide how damages will be settled.

Under no circumstances will AGRU AMERICA assume liability for consequential damages due to defective liner or incorrect installation. AGRU AMERICA will not be responsible for failures arising from incorrect welding of seams in the installation.

Further, AGRU AMERICA's warranty will be void in the event that the buyer performs repairs or makes alterations without the express approval of AGRU AMERICA in writing. AGRU AMERICA's maximumliability under this warranty will not exceed the purchase price of liner and will only be in force when payment has been made in full and further claims regardless of the legal suppositions are not applicable.

This warranty is only valid on condition that the generally approved technical standards and in particular the guidelines for the installation of the liner are followed.

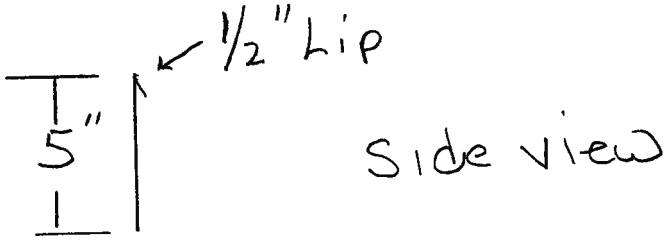
For AGRU AMERICA, Inc.

_____ _____

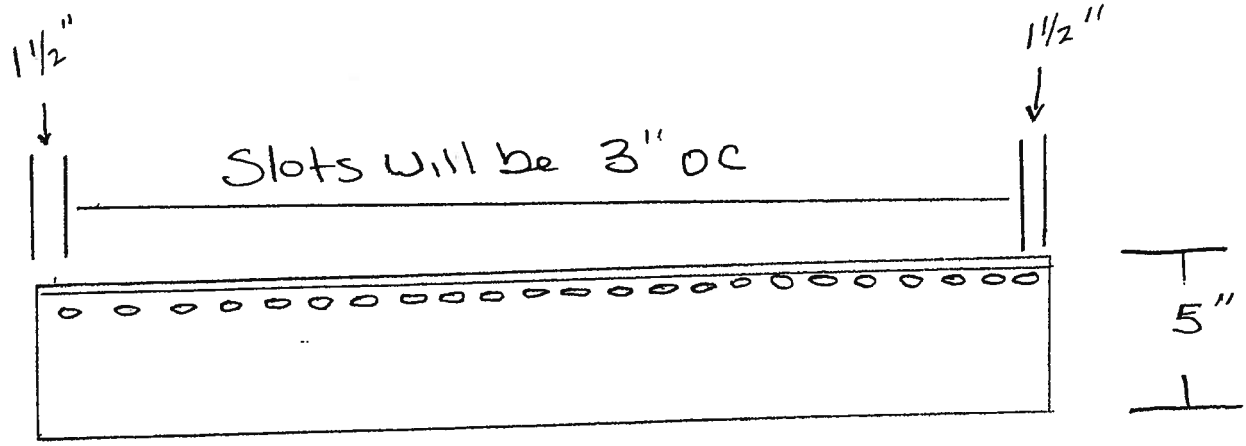
Authorized Official (Date)

Paul W. Barker (Date: Date of Installation)
Vice President

Corporate Offices: 500 Garrison Road, Georgetown, S.C. 29440 * 843-546-0600 * 800-321-1379 * Fax 843-546-0516
Sales Office: 700 Rockmead, Suite 150, Kingwood, TX 77339 * 281-358-4741 * 800-373-2478 * Fax 281-358-5297
Email: salesmkg@agruamerica.com



Side view

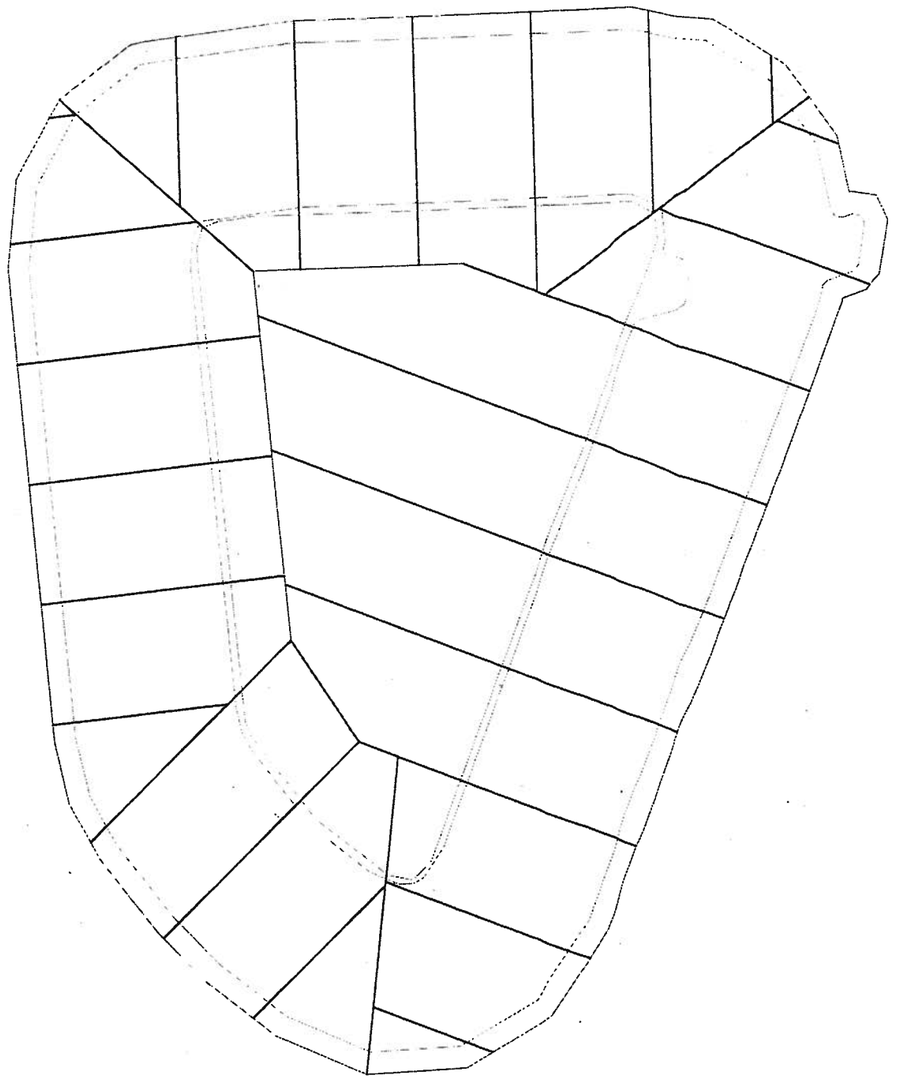


.032 Thick Aluminum flashing
5" x 1/2" x 10'0" Long
With 1/2 x 1/2 slots 3" oc

To be secured with one of the folbwing

Hit NAIL
OR
Concrete Screws

Referene DRAWing AA Page 7b



This is proposed panel layout only and is intended to show the general way the material the way the material should be laid out.

Site conditions such as wind direction and available subgrade will effect th way the material is unlimately laid out.

Landsaver's Site Supertendent will make the final decission in the field as to the actual layout.

Job # C3022

DRAWING SUBMITTED BY:
LANDSAVER ENVIRONMENTAL

FORMER SINCLAIR REFINERY SITE

PROPOSED 80 MIL HDPE PANEL LAYOUT FOR SEDIMENTATION POND

SIZE	FSCM NO.	DWG NO.	REV

SCALE:1"= 40'	DRAWN BY: MBAIR	SHEET