CLAREMONT POLYCHEMICAL SUPERFUND SITE
Groundwater Treatment System
Old Bethpage, New York
(NYSDEC Site Number 130015)

MONTHLY REPORT
Of the Operations & Maintenance Activities
during
January 2016

NYSDEC STANDBY ENGINEERING CONTRACT
Work Assignment #D007625-19

PREPARED FOR
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 BROADWAY
ALBANY, NEW YORK 12233

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Prepared by

Henningson, Durham & Richardson
Architecture and Engineering, P.C.
One International Boulevard, 10th Floor, Suite 1000
Mahwah, New Jersey 07495

Prepared February 2016

Table of Contents

ACRONYMS AND ABBREVIATIONS

AS	air stripping
ASF	air stripper feed
CA	carbon adsorber
CLP	contract laboratories program
DBA	doing business as
DOSR	daily operations summary report
DTW	depth to water
gpd	gallons per day
gpm	gallons per minute
GW	groundwater
GWTP	groundwater treatment plant
GWTS	groundwater extraction, treatment, and reinjection system
HCl	hydrochloric acid
HMI	human-machine interface
HRP	HRP Associates, Inc., dba HRP Engineering, P.C.
HVAC	heating, ventilation, and air conditioning
IG	infiltration gallery
IW	injection well
LGAC, LCA	Liquid phase granular activated carbon, Liquid side carbon Adsorbers
LTRA	Long Term Response Action
MCC	motor control cabinet
MCP	master (main) control panel
NCDPW	Nassau County Department of Public Works
NYSDEC	New York State Department of Environmental Conservation
O&M	operation and maintenance
PDB	Passive Diffusion Bags
PD	plant discharge
PID	photo ionization detector
PLC	programmable logic controller
psi	pressure in pounds per square inch
PW	process water
SAIC	Science Applications International Corporation
SAP	sampling and analysis plan
SOP	standard operating procedure
SSHP	site safety and health plan
TA	Test America laboratory
TOB	Town of Oyster Bay
USACE	United States Army Corps of Engineers
VGAC, VCA	vapor-phase granular activated carbon, Vapor side carbon adsorber
VFD	variable frequency drive
VOCs	volatile organic compounds

1.0 OPERATION AND MAINTENANCE ACTIVITIES

Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR) continued its daily operation and maintenance (O&M) of the Claremont Polychemical Superfund Site Groundwater Treatment System (GWTS) during the January 2016 period. This report covers the operational period defined as beginning at 0600 hours, January 1, 2016, through 0600 hours, February 1, 2016. O&M conducted during this reporting period was performed in accordance with the site O&M Manual.

The GWTS - plant, grounds, and well system were maintained for the 31 days in this reporting period during which the treatment system flows and tank levels remained relatively stable. During this January period, the plant experienced several momentary power interruptions but did not lose any operating time.

Readings of key process parameters were recorded each work day morning. These readings are used to monitor the system's performance and condition, and as a basis for adjustments to the plant processes. These readings are recorded in the Daily Database which is an electronic file maintained in the monthly operating document folders.

1.1 Daily Operations Summary Reports

The daily operation of the GWTS is briefly described in the Daily Operations Summary Report (DOSR). The DOSR includes a summary of the daily O&M activities and is based on the daily operating worksheets and the Daily Plant Activity Notes. These worksheets include:

Daily Operating Log – selected process readings (CPS-Form-008)
Daily Activities Summary Report - plant operator activities (CPS-Form-007)
Daily Site Safety Inspection – process condition checklist (CPS-Form-009)
Employee Sign-In Sheet – employee daily log in (CPS-Form-11)

1.2 Summary of Maintenance Activities

Maintenance of the treatment system and associated equipment is performed in accordance with the Claremont GWTS O&M Manual. Routine activities and equipment function tests completed during this reporting period are summarized in the Monthly Maintenance Log. This report is electronically filed and is available for review.

The plant and system maintenance incorporates the equipment manufacturers' recommendations, operations experience, and good engineering and maintenance practices. A detailed accounting of daily operation and maintenance activities is provided in the plant operator's daily logbook, the site supervisor's daily logbook, the operator's daily activities summary reports, and the site supervisor's daily plant activity notes.

A list at the end of this report gives the location of the manuals, logs, reports, and databases maintained for the GWTS.

Maintenance and project activities completed during January included:

- General maintenance tasks continued including - outdoor clean up, plant housekeeping, system inspections and system monitoring.
- Scheduled monthly tasks such as motor amp load readings, injection well DTB, DTW, and flow measurements, infiltration gallery DTW readings, process valve function tests, and comprehensive site safety inspections continued.
- Grounds and well maintenance tasks and inspections continued.
- The influent pumps were rotated from 1&3 to 1&2 to 2&3. The other process pumps from 1 to 2 to 3. Only one each of three ASF, TWF and INJ pumps were required for the current treatment operations.
- The concrete pads and the drive-over pipe access covers at the infiltration galleries were exposed, cleaned and painted for better visibility. Several of the electrical vault covers in the IW wellfield were also painted.
- Hanging pipes were removed from the LCA vessels.
- PM was completed on the plant mowers.
- The AS tower duct flanges were tightened to reduce water seepage.
- The plow was installed on the plant truck and tested.
- The plant roof was repaired by Division 7 Roofing contractors.
- The HVAC mezzanine was cleaned up. Boxes and packing material were discarded.
- The flow element for IW-4 was removed and cleaned. The line was flushed and the element was re-installed. The system was returned to service.
- Adjustments were made to selected IG-1 and IG-3 pipe caps.
- Snow removal tasks were completed which included clearing the pads at all exit doors.
- Gage tubing was replaced at the VCA-1 magnehelic gage.
- PM was completed on the air compressor.
- The plow shoes were installed.
- The front gate was re-hanged on the lower hinge.

2.0 MAINTENANCE LOGS

The following operating logbooks are currently in use:

- Well Maintenance Log CL-28
- Sampling and Field Support Log CL-37
- Field Support Log CL-43
- Miscellaneous Field Notes CL-47
- Plant Operator's Daily Log CL-53
- Site Supervisor's Daily Log CL-54

Except for log book CL-26, the remaining project log books are stored at the plant. All of the logbooks are identified on a master logbook inventory control file and those on-site are routinely checked as part of the site quality control program.

3.0 TECHNICAL SUPPORT ACTIVITIES

3.1 HDR Personnel

- The plant operators maintained the system throughout the period.
- Patricia Parvis provides project management and guidance from the Mahwah office.
- Christine Weaver continues to support the EQuIS sample data system.
- HDR staff continues to support various plant activities.
- Tom Fogarty was on site 1/29 to deliver and set up a phone for the plant operator.

3.2 NYSDEC Personnel, sub-contractors and other visitors

- Division 7 was on site 1/7 to repair the plant roof.
- Mets Roll-off Service was in to empty the dumpster 1/8.
- TA-NY was in 1/21 to pick up the plant discharge samples for delivery to TA-Edison.

3.3 Deliveries

- Mail was delivered 3 times.
- TA-NY dropped off the cooler and sample bottle order 1/22.
- UPS delivered the plow parts order 1/27.

4.0 HEALTH AND SAFETY

Work at the Claremont Polychemical GWTS was conducted in accordance with the approved Site Safety and Health Plan (SSHP). Site safety inspections were performed every workday and the reports are filed on-site. In addition to the daily site safety inspections, a comprehensive safety inspection was carried out 1/18. These worksheets are also on file.

On 1/7 a tailgate safety meeting was conducted for the benefit of the Division 7 roofers.

5.0 PLANNED ACTIVITIES AND SCHEDULES

The status of project work and significant corrective maintenance activities is updated as needed and reviewed monthly. This status of plant conditions and concerns was updated January 26 and is electronically filed. It is included at the end of this report as Table 12-1 – Claremont Corrective Action Summary.

Separate tentative schedules for equipment maintenance tasks are shown in the O&M Manual and the Sampling and Analysis Plan (SAP). Other significant activities being considered

include:

- The next quarterly PW samples are scheduled for February 25.
- The next quarterly GW samples are to be scheduled for mid-March.
- Further testing is required for the IG flow meters.
- A pipe cap at IG-3 is damaged and will require replacement. The pipe itself will require some modification.
- The performance of the injection well system continues to raise a concern.
- Selected equipment and fixtures are to be painted.
- The level control floats for the sump pump are to be reattached to the sump wall.
- The AS blower bearings may need to be replaced.
- The LCA vessels are to be scrapped.
- The INF, PD, and the IW flow elements are to be cleaned.
- The pump control in the RCY tank is to be evaluated.
- The flow control meters for the treatment trains are to be calibrated.
- The fire alarm panel is to be evaluated.

6.0 MONITORING WELL WATER ELEVATIONS

The monitoring well system's groundwater level elevation data table was updated after December's groundwater sampling task. This database is available for review.

The next water level recording event is scheduled for mid-March.

7.0 TREATMENT SYSTEM FLOWS

The volume of treated water discharged by the treatment plant to the injection well field is determined daily from readings of the magnetic flow meter on the plant effluent line. A summary of the January meter readings is provided in Table 7-1. The total volume of treated water discharged, as measured from 0600 hours on January 1, to 0600 hours on February 1, was 7,238,423. The cumulative volume of water discharged for the HDR contract year (Sept. 1, 2015 to present) was 37,189,387 gallons. For the 2016 calendar year the total volume of water discharged was 7,238,423 gallons. A graphic representation of the system's daily flows is provided in Figure 7-1. The plant experienced no downtime in January.

In January, the plant discharge flow averaged 163 gallons per minute (gpm) and 233,498 gallons per day (gpd). The plant discharge flow rate was stable throughout the period.

Month	Flow Average (gpm)	Volume Discharged (gpd)
January '14	334	481,617
February '14	318	457,259
March '14	333	478,018
April '14	320	460,702

Month	Flow Average (gpm)	Volume Discharged (gpd)
May '14	314	452,422
June '14	295	424,576
July '14	302	435,092
August '14	292	420,245
September '14	250	360,066
October '14	254	365,181
November '14	258	371,571
December '14	240	344,998
January '15	258	372,237
February '15	256	368,601
March '15	254	365,363
April '15	244	350,913
May '15	241	347,461
June '15	213	306,679
July '15	235	337,848
August '15	208	298,894
September '15	174	250,316
October '15	176	253,630
November '15	168	241,216
December '15	164	236,853
January '16	163	233,498
Historic Target	**335**	**482,400**

The flow monitoring units for the individual IW systems allow for reading the flow rate and volume discharged to each individual IW system. The influent flow restrictions for IW-1, -2, and -3 are introduced at the plant manifold as necessary; other restrictions were introduced at the wells for IW-1 and IW-3. The IG meters are not functioning. The velocity of water influent to IW-2 is too low for the flow element to pick up (the values indicated are estimates). In January, the flows to each well system are indicated below:

Injection Well System	Flow Average (gpm)	Volume Discharged to well (gallons)
IW-1	60	2,699,734
IW-2	6	267,840
IW-3	31	1,378,791
IW-4	67	2,978,583
System	**164**	**7,324,948**

Differences in the flow measurements of the different treatment process steps are observed. These discrepancies are due in part to the type of flow meters utilized (paddle wheel vs. magnetic vs. turbine), the plumbing configurations, sludge build up in the piping at the flow elements, and rounding factors in the meters.

In the wellfield, the valves controlling the flow into IW-1 and IW-3 are partially closed and those controlling flow into IG-1 and IG-3 are fully open. Both infiltration galleries are adequately draining at the current influent rates. Surface water at IG-1 and IG-3 is attributed to leaking pipe caps and not to clogged laterals. Currently only one injection pump is required online.

The plant's total effluent discharge is limited by plumbing constraints, the discharge capacity of the injection pumps, and the ability of the injection wells to accept water.

8.0 CHEMICAL CONSUMPTION

The four (4) chemical feed systems are currently not in-service. The systems are periodically tested and could be made operational. The caustic, the hydrochloric acid and the polymer chemical feed tanks and feed tubing contain water for testing and inspection purposes. The $KMnO_4$ tank is empty with a cracked tank drain flange.

There were no bulk chemicals present onsite in January 2016.

9.0 CARBON SYSTEMS

9.1 Aqueous-Phase Carbon

Both Liquid-phase Carbon Adsorber Vessels (LCAs) are offline and empty. The liquid phase carbon process has been removed from the treatment system.

9.2 Vapor-Phase Carbon

One of two Vapor-phase Carbon Adsorber Vessels (VCA) is on-line for the treatment of the air stripping (AS) air stream. Currently, VCA-1 is online. VCA-2 is offline and is ready for service.

Monitoring of VOCs in the online vessel's air stream is performed weekly with a photo-ionization detector (PID) calibrated per manufacturer's recommendations. No emissions from the vessel VCA-1's effluent air stream were observed in January.

No spent vapor-phase carbon waste was generated during this period, and no carbon was added to the vessels.

10.0 WASTE DISPOSAL

No chemical waste was removed or disposed of in January.

11.0 MONTHLY DISCHARGE MONITORING REPORT

The GWTS is currently operating under an equivalency permit from the New York State Department of Environmental Conservation (NYSDEC). A review of the analytical results for the monthly plant discharge samples, (included within Section 14.0), indicated all analyzed parameters were below noted permit limits. The most recent plant discharge results can be seen in Table 14-1.

The plant's water discharge permit has been extended through December 31, 2025.

12.0 OTHER OPERATIONS, MAINTENANCE, OR MANAGEMENT ISSUES

If the operations at the Claremont GWTP are to be terminated or mothballed, a plan will be needed to address the transition. To be included but not limited to, agency regulation requirements for the shut down of the system, if, how and where historic and operating records are to be stored, the level of power shut down, and the level of security/maintenance to continue on the facility and wellfields.

Water appears periodically on the west side surface of IG-1 and IG-3. Piezometer tube readings indicate that the gallery is draining adequately. Further investigation indicated leakage from several of the manifold pipe caps.

The IG flow meters continue to malfunction. More investigative work is required to determine the problem.

It should be considered that carbon sludge may be deposited throughout the system's piping and instrumentation.

Several pumps are making noise when activated (INJ P-2, LCAF P-2 and INF P-2). INF-P3 requires manual shaft rotation before startup after a prolonged idle period.

The pH of the plant discharge remains below 6.5 standard units. The trend of the recent average plant discharge pH can be seen in Table 14-3.

IW-1, -2, and -3 appear to be accepting little water and their influent water flows remain restricted.

The actual discharge pressure of the injection pumps is higher than their specified operating range and therefore will underperform. However, at current flows and the condition of the injection system, one pump online is adequate.

Other on-going plant maintenance issues are summarized on Table 12-1.

13.0 PLANT DOCUMENTS

Procedures and standard forms are written, reviewed, and revised as needed. In January, an update of the Field Sampling Plan was started.

14.0 TREATMENT PLANT AND WELL FIELD MONITORING RESULTS

The Claremont Polychemical GWTS is monitored through the analysis of off-site laboratory analytical data and on-site field data.

14.1 Off-site Analytical Data Results

Monthly plant discharge (PD) samples are taken for organic analysis in compliance with the NYSDEC discharge permit. Quarterly groundwater (GW) samples are taken for organic analysis, and quarterly process water (PW) samples are taken for organic, inorganic, and generic analysis. January's sampling activities included:

- The monthly PD samples were collected 1/21 and shipped to TA-Edison for organic analysis.
- The December GW sample data was processed and submitted to Mahwah for uploading to EQuIS.
- The December PD data was processed and uploaded to EQuIS.
- The next quarterly PW samples are scheduled for 2/25.

14.2 Field Data

Injection Well Soundings and DTW

Measurements to determine the well depth from the top of the injection well column to the bottom were taken January 6. A summary of the historical data can be reviewed in Table 14-2. Currently it appears that the sediment levels are stable.

The IW water levels are manually monitored and all the wells are stable. The plant flow control valves are adjusted for IW-1, IW-2, and IW-3. The DTW readings for the injection wells were also recorded 1/6.

	Orig. Well depth ft bgs	Screen Interval ft bTOC	Depth to Bottom ft bTOC	Depth to Water ft bTOC
IW-1	-248.50	-133 to -248	-145.43	-2.24
IW-2	-248.50	-100 to -250	-106.05	-35.51
IW-3	-253.20	-102 to -250	-246.15	-13.90
IW-4	-250.00	-100 to -250	-185.00	-11.60

Plant Discharge pH and Temperature

Treatment plant effluent is monitored for pH and temperature on a weekly basis in order to obtain a monthly average in compliance with the NYSDEC discharge permit requirements. These readings are obtained from the plant effluent taken from a controlled point with calibrated portable meters. A summary of this data for January is as follows:

Date	pH (su)	Temp ^{0}C
Jan. 4	6.25	15
Jan. 11	6.31	14
Jan. 18	6.41	15
Jan. 25	5.85	9
Nov. Average	**6.21**	**13**

su – standard unit

The previous NYSDEC discharge permit required the plant discharge to have an average monthly pH greater than 5.50 su. The treatment plant effluent pH averaged 6.21 su in January and met the monthly average pH discharge requirement. A graph of the plant discharge monthly pH average trend over several months is provided in Table 14-3.

AS Tower Carbon Bed Air Monitoring

Using a calibrated PID meter, weekly air monitoring readings are taken of the influent and effluent air streams of the active VCA vessel following the air stripping tower. Currently vessel VCA-1 is on-line. Below are the readings for January.

Date	Outlet
Jan. 4	0
Jan. 11	0
Jan. 18	0
Jan. 25	0

*PID readings indicate that the VOCs in the air stream are lower than the part per million levels (ppm) of the instrument's capability.

No emissions were detected in the discharge of the active vessel (VCA-1) in January.

Other routine data collected during January included:

- The plant sound level readings were recorded, 1/18.
- The utility meter readings were recorded weekly.
- The extraction well packer pressures were recorded periodically.
- The process motor amp loads were measured and recorded, 1/28.
- The infiltration gallery DTW readings were recorded 1/18.

15.0 PROCESS ANALYSIS, INTERPRETATIONS, AND CONCLUSIONS

15.1 Extraction and Influent Processes

- The discharge flows from EX-1 remain restricted.
- The pump for EX-2 remains shut off.
- The packer for EX-1 was recharged.
- The EQ tank level controller element is heat traced and insulated.
- The EX and INF pump motor amp load readings were recorded.
- Both active EX pumps are running ~14 hours per day.
- The three influent pumps are operational and two are online.
- The flow control for treatment train 1 fluctuates but is manageable.
- The influent pumps were rotated twice in January.
- INF P3 requires manual rotation prior to activation.
- The INF check valves are manually set.
- Routine maintenance continues.

Extraction Well Packer Pressure Readings:

	EX-1 (>25 psi)	EX-2 (>35 psi)
Jan. 6	26	38
Jan. 11	28	38
Jan. 20	21	38
Jan 21	21 Recharged to 40 psi	38
Jan. 27	35	38

15.2 Flow through Aeration Process

- Both treatment trains are on-line and the process water is balanced between them.
- The polymer, potassium permanganate, caustic, and hydrochloric acid feed systems remain off line. All 4 systems were last tested in April 2015. All systems work adequately. The $KMnO_4$ feed tank will require repairs.
- The flash and flocculation mixers at the clarifiers remain idle due to lack of solids generation.
- The pH control systems are out of service.
- The reaction tanks, clarifier systems, and settling tanks continue to operate as pass-through settling tanks.
- Maintenance is performed as required.

15.3 Air Stripping Process

- The three ASF pumps are operational. Only one is required with current flows. They were rotated twice in January.
- The motor amp load readings were recorded.

- The check valves are manually set.
- The VFD for ASF P2 exhibits an earth ground fault. When on-line, Pump 2 operates through the VFD for pump 3.
- The pH control system is not in service.
- The VCA carbon beds are drained of water as necessary.
- The blower bearings were lubricated and PM completed.
- Gage tubing was replaced at VCA-1.
- Selected duct flanges were tightened. This reduced the amount of air escaping.
- Paint is peeling from the tower.
- No other issues arose with the air stripping system. Routine maintenance continues.

15.4 Treated Water Tank Feed System (Former LCA Feed system)

- The LCA vessels are isolated, out of service, and empty.
- All three pumps are operational and were rotated twice in January. Only one pump is necessary for the current flows.
- The pump motor amp load readings were recorded.
- The pump check valves are manually set.
- Other routine maintenance tasks continued.

15.5 Treated Water Injection Process

- The plant discharge system is online and operational.
- The TW tank level controller elements are heat traced and insulated.
- The pumps were rotated twice in January. Only one pump is necessary for the current plant flows.
- The flow element for IW-4 was removed and cleaned. The local piping was flushed.
- The galleries are draining adequately. Periodically water appears on the surface of IG-1 and IG-3, a plan to correct this is in place.
- The IG flow meters are not operating correctly. Further investigation is required.
- The gallery pipe drive over pads and covers were painted.
- The flow influent to IW- 1, IW-2 and IW-3 is restricted.
- The pump motor amp load readings were recorded.
- The check valves for P1 and P2 are manually set.
- The well transducers are not functioning and are disregarded.
- No other issues were encountered with the injection system.

16.0 GROUNDS

16.1 Plant Perimeter

- General outdoor clean up tasks continue.
- Snow was removed as required.
- The plant gate was re-hanged on its lower hinge.
- The access gates are clear.

- The fire hydrant is clear and accessible.

16.2 Well Field

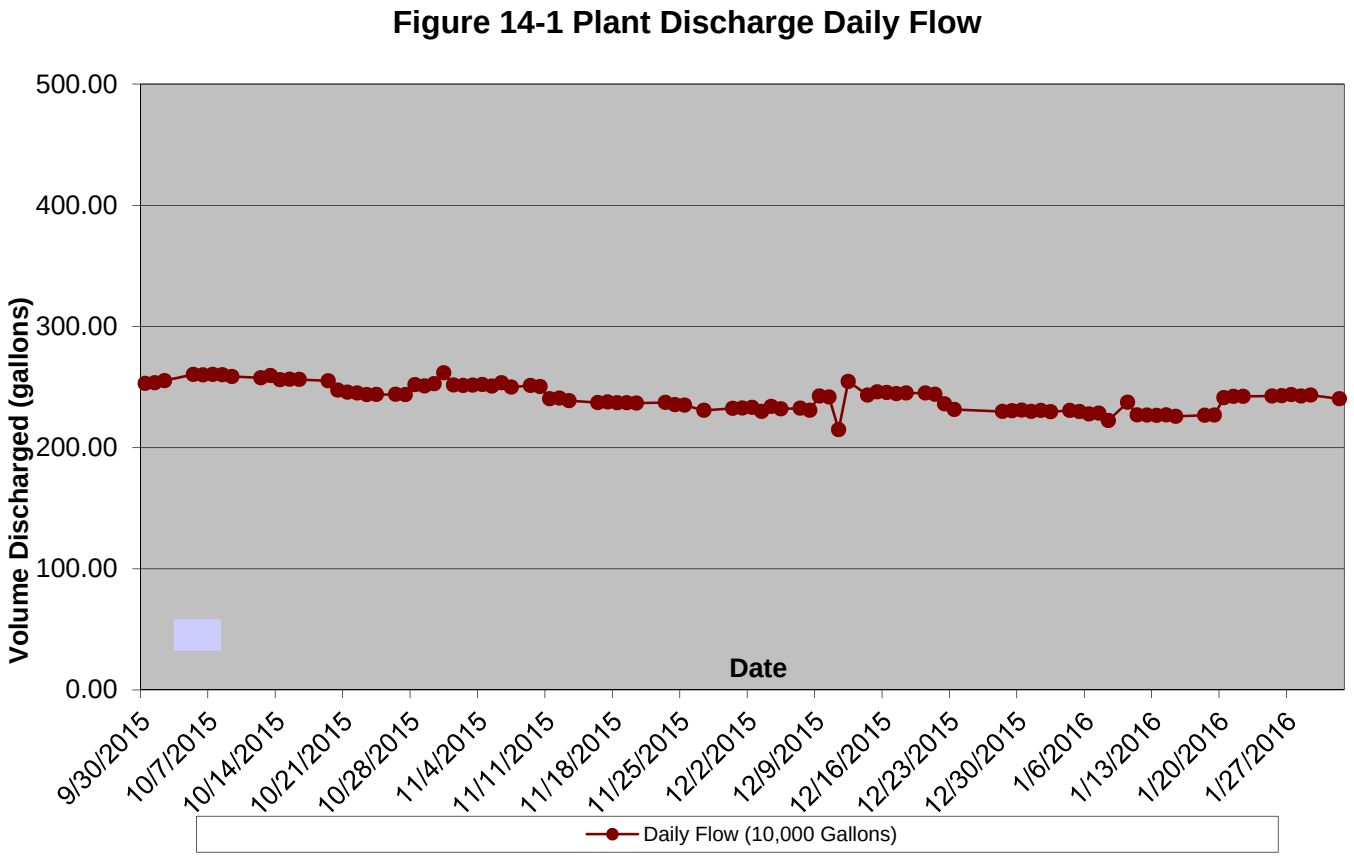
- Manual DTW readings of the IWs continued.
- Extraction well packer pressure readings continue.
- The packer for EX-1 was recharged.
- The manifold pipe caps in the infiltration galleries are adjusted as necessary.

16.3 Other

- The monthly in-house inspection of the plant truck was completed.
- Miscellaneous trips for local purchases were made.
- Consumable floating shoes were mounted on the plant snow plow.

FIGURES

Figure 14-1 Plant Discharge Daily Flow



TABLES

TABLE 7-1 Magnetic Flow meter Daily Totalizer Readings – January 2016

DATE	TOTALIZER READING	GALLONS PER DAY	GALLONS PER MINUTE
1/1/2016	28018787	211213	147
1/2/2016	28230000	495000	172
1/4/2016	28725000	231000	160
1/5/2016	28956000	239000	166
1/6/2016	29195000	222000	154
1/7/2016	29417000	226000	157
1/8/2016	29643000	426000	148
1/10/2016	30069000	256000	178
1/11/2016	30325000	232000	161
1/12/2016	30557000	231000	160
1/13/2016	30788000	221000	153
1/14/2016	31009000	226000	157
1/15/2016	31235000	675000	156
1/18/2016	31910000	227000	158
1/19/2016	32137000	229000	159
1/20/2016	32366000	239000	166
1/21/2016	32605000	246000	171
1/22/2016	32851000	732000	169
1/25/2016	33583000	235000	163
1/26/2016	33818000	244000	169
1/27/2016	34062000	251000	174
1/28/2016	34313000	253000	176
1/29/2016	34566000	691210	160
2/1/2016	35257210		
Jan '16 Treated Water Volume		**7,238,423**	
Jan '16 Avg. GPM Discharged			**162**

TABLE 12-1 Plant conditions and concerns (updated 1/26/16)

Date	Condition to be corrected	Status and Actions	Priority
2007	PD manifold leak	Leak is monitored and deemed to be not serious Leave as is and continue monitoring	3
2008	Check Valve failures	Plant wide – 13 units, this situation creates problems for any remote control of the processes. Valves are manually controlled	2
2008	Injection Pump 1&2 shut off valve failures	Minimum 3 units. Pumps cannot be isolated. Leave as is. The influent valve for P2 has been replaced	2
Aug '08	Air Compressor overhaul	A failure may prevent some tasks. System is run on an 'as needed' basis	4
2009	EQ tank isolation valve failure	The tank cannot be isolated Run system as is.	2
2009	Filter press hydraulic fluid leak	The hydraulic pump system will require outside service. Fluid is added as needed. System is operable.	4
Aug '10	IW transducer replacement	Leave as is and manually measure water levels	3
June '11	ASF P2 VFD failure	Leave unit out of service P-2 is run on off-line pump's VFD	2
July '11	INF P1 VFD malfunction	Leave as is. Pump flow is controlled by throttling the P-1 discharge valve. The system seems better and just requires adjustment to the PID control.	2
Apr '12	Permanganate tank repair	The feed system is off line and tank is not needed. Tank will be repaired when its use is mandated.	4
Sept '12	Flow into the wellfield has been decreasing.	Pump efficiency and water acceptance are both factors. Items to address include: - change discharge & manifold plumbing - change out pump impellers - resize pumps - review plant flow requirements - Redevelop wellfield - Install another IG	2
Jan '13	Rust spots on storage tank shells	Lower two sections of the TW and EQ tanks have been prepped and spot primed. Top section is not at risk of leaking.	3
May '13	Sump pump level control mountings are loose	The float is secured to a submersed pipe. A permitted confined space entry will be required for a permanent repair.	3
Aug '13	Sediment infiltration of IW-2	Possible breach in well casing or screen. Flow has been restricted influent to the well. The DTW and DTB continue to be monitored.	2
Jan '14	Replacement of bearings on the AS blower	The shaft bearing is making noise. Replacement is not necessary at this time. The bearings are a capital item (~$1000 per pair, 1 pair to be replaced).	2
March '14	INF P2 has developed a mechanical seal leak.	The leak is not severe and requires no action at this time.	3
April '14	Roof penetration Vent leaks	Need to re-set piping and seal roof surface. Quotation process is underway. Some vendors have provided quotes **Both penetration leaks were repaired in January – No leaks**	
May '14	INJ P1 and P2 output is dropping.	The impeller for INJ P2 has been cleaned with no improvement to flow. Influent restrictions to the wells have increased discharge pressures.	2
June '14	A second leak has developed in the INJ pump discharge manifold	The leak is currently a drip at a glue joint in the manifold. The condition will be monitored	3

Date	**Condition to be corrected**	**Status**	**Priority**
Sept '14	Paint is peeling from the AS tower	Venders have been contacted. Paint specification have been provided	3
April '15	The flow meters in IG-1 and IG-3 are not recording flow	Meter elements were removed and cleaned in July '15. Once cleaned the mechanism spun freely but do not register flow. The meters will require re-examination.	3
July '15	Influent flow control for treatment train 1 is problematic	Currently the system is monitored and manually adjusted. The PID control mechanism scheme is now much tighter and controls on the lower limits. **Both INF P1 and P3 are affected.**	3
August '15	Flooding observed in area adjacent to and above IG-3	Flow influent to IG-3 has been lowered. System operation results in the influent piping remaining full while hydraulically pressurized. The surface water appears to be due to loose piping end caps. These will be replaced. **The NW pipe cap was removed and adjusted and reinstalled. The cap for the SW pipe is cracked and there is not enough clearance under the drive over cap for a replacement. Modifications to the pipe will be required**	2
August '15	Nuisance alarms on Fire alarm control panel	Reset as necessary. Panel shut down. Vender is to be contacted	3
August '15	Auto drain valve on compressor does not shut off	Valve is manually activated. The valve will be opened, cleaned, and examined.	3
Nov '15	6" backflow prevention device failed its annual inspection	Proposal for repair received. Will schedule work when approved. Work completed 12/22/15	2
Dec '15	Influent pump #3 failed to run upon activation.	Previous recent experience with pump required manual rotation of pump shaft if pump had been idle for prolonged periods of time (between pump rotations). Pump was taken out of service and physically rotated to free up its operation. The unit was returned to service and monitoring will continue.	3
Dec '15	INF P3 leak at adapter housing	It appears to be a seal leak, not severe at this time. It may be contributing to the problem indicated above. **Last observation revealed no leak. Monitoring will continue.**	3
Dec '15	Water observed coming from IG-1 main clean out	Flow influent to IG-1 has been lowered. As indicated above, the flow may be due to loose pip end caps. These will be replaced. **All caps were tightened and the area is now dry. Monitoring will continue**	4
Jan '16	**Another leak in PD manifold**	**This leak also at an elbow connection is after the PD flow meter at the top of the pipe. It is only a drip and is of not a major concern at this time. The leak will be monitored.**	**3**

Current monthly activity in bold

Priority Level 1- Urgent and must be done
2- Not urgent but must be done
3- Not urgent but should be done
4- Not urgent but would like done

TABLE 14-1 Recent Plant Discharge Analytical Results

The plant discharge was last sampled on January 21. The following are the analytical results for this event.

Plant Discharge			
Parameters	**Discharge Limitations (SPDES 2015)**	**Units**	**Results January 2016**
pH (range)	6.5 – 8.5	SU	6.21
1,1,1-Trichloroethane	5	ug/l	U
1,1-Dichloroethane	5	ug/l	U
1,1 Dichloroethylene	5	ug/l	U
Benzene	0.7	ug/l	U
Chlorobenzene	5	ug/l	U
Chloroform	7	ug/l	U
1,2-Dichloroethane	0.6	ug/l	U
1,2-(cis) Dichloroethylene	5	ug/l	U
1,2-(trans)Dichloroethylene	5	ug/l	U
Ethylbenzene	5	ug/l	U
Methylene Chloride	5	ug/l	U
nitrobenzene	0.04	ug/l	U
Tert-butyl alcohol	Not indicated	ug/l	U
tert-Butyl-Methyl ether	5	ug/l	U
Tetrachloroethylene(PCE)	5	ug/l	U
Toluene	5	ug/l	U
Trichloroethylene(TCE)	5	ug/l	U
Bis(2-ethylhexyl)phthalate	5	ug/l	U
Di-n-butyl phthalate	50	ug/l	U
Antimony, Total recoverable	3	ug/l	NS
Arsenic, Total recoverable	50	ug/l	NS
Barium, Total recoverable	2000	ug/l	NS
Lead, Total recoverable	50	ug/l	NS
Selenium, Total recoverable	40	ug/l	NS
Iron, Total recoverable	600	ug/l	NS
Manganese, Total recoverable	600	ug/l	NS
Nitrogen, Total (as N)	10	mg/l	NS
Solids, Total Dissolved	1000	mg/l	NS
Chromium, Hexavalent	100	ug/l	NS
Chloride Ion	NL	mg/l	NS
Fluoride Ion	NL	mg/l	NS
Sulfate Ion	NL	mg/l	NS

NS – Not sampled, **J** – Estimated value, **U** – Analyzed but not detected, **NL** – Monitor only

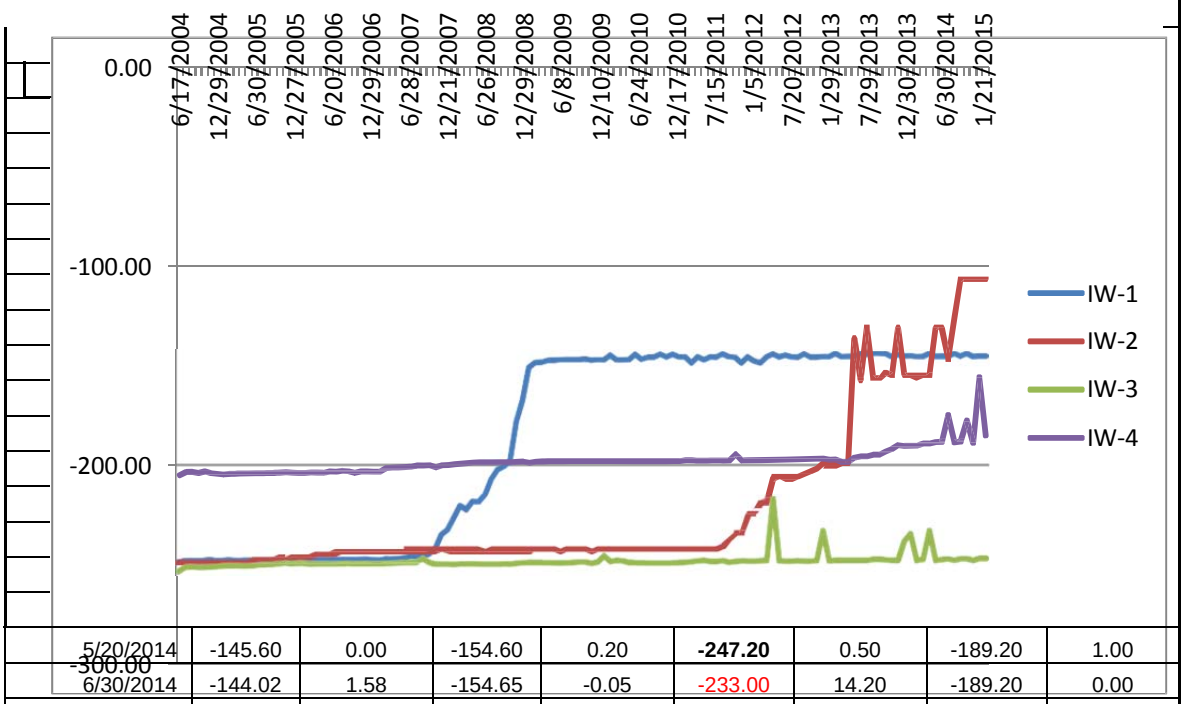
Discharge limitations updates as per the water discharge permit (expires December 31, 2025).

TABLE 14-2 Injection Well Soundings

	Injection Well 1		Injection Well 2		Injection Well 3		Injection Well 4	
Date	DTB(ft)	Difference	DTB (ft)	Difference	DTB (ft)	Difference	DTB (ft)	Difference
6/17/2004	-248.50	--	-248.50	--	-253.20	--	-205.00	--
7/23/2004	-247.97	0.53	-248.19	0.31	-251.20	2.00	-203.50	1.50
8/16/2004	-247.90	0.07	-248.18	0.01	-251.00	0.20	-203.40	0.10
9/14/2004	-247.95	-0.05	-248.15	0.03	-251.10	-0.10	-203.95	-0.55
10/28/2004	-247.79	0.16	-248.20	-0.05	-251.20	-0.10	-203.15	0.80
11/15/2004	-247.40	0.39	-248.26	-0.06	-251.03	0.17	-204.03	-0.88
12/29/2004	-247.87	-0.47	-248.33	-0.07	-250.82	0.21	-204.40	-0.37
1/10/2005	-247.83	0.04	-248.12	0.21	-250.54	0.28	-204.70	-0.30
2/16/2005	-247.50	0.33	-248.25	-0.13	-250.45	0.09	-204.36	0.34
3/18/2005	-247.82	-0.32	-248.10	0.15	-250.40	0.05	-204.43	-0.07
5/10/2005	-247.81	-0.03	-248.14	-0.01	-250.45	0.02	-204.22	-0.02
6/30/2005	-247.62	0.19	-247.25	0.89	-250.36	0.09	-204.04	0.18
7/26/2005	-247.67	-0.05	-246.82	0.43	-249.93	0.43	-204.11	-0.07
8/29/2005	-247.71	-0.04	-246.50	0.32	-249.78	0.15	-204.17	-0.06
9/27/2005	-247.77	-0.06	-246.29	0.21	-249.77	0.01	-203.90	0.27
10/24/2005	-247.78	-0.01	-246.00	0.29	-249.44	0.33	-203.84	0.06
11/14/2005	-247.51	0.27	-246.19	-0.19	-249.10	0.34	-203.57	0.27
12/27/2005	-247.60	-0.09	-245.70	0.49	-249.32	-0.22	-203.83	-0.26
1/27/2006	-247.51	0.09	-246.09	-0.39	-249.21	0.11	-203.98	-0.15
2/16/2006	-247.50	0.01	-245.69	0.40	-249.19	0.02	-203.98	0.00
3/23/2006*	-247.59	-0.09	-245.65	0.04	-249.60	-0.41	-203.75	0.23
4/28/2006	-247.54	0.05	-243.68	1.97	-249.50	0.10	-203.78	-0.03
5/24/2006	-247.38	0.16	-243.61	0.07	-249.57	-0.07	-203.90	-0.12
6/20/2006	-247.47	-0.09	-243.70	-0.09	-249.46	0.11	-203.14	0.76
7/28/2006	-247.44	0.03	-243.37	0.33	-249.52	-0.06	-203.33	-0.19
8/21/2006	-247.34	0.10	-243.19	0.18	-249.42	0.10	-202.88	0.45
9/22/2006	-247.36	-0.02	-242.70	0.49	-249.27	0.15	-203.05	-0.17
10/30/2006	-247.16	0.20	-242.64	0.06	-249.48	-0.21	-203.92	-0.87
11/29/2006	-247.32	-0.16	-242.50	0.14	-249.22	0.26	-203.19	0.73
12/29/2006	-247.22	0.10	-242.52	-0.02	-249.29	-0.07	-203.15	0.04
1/30/2007	-247.44	-0.22	-242.60	-0.08	-249.47	-0.18	-203.35	-0.20
2/21/2007	-247.63	-0.19	-242.56	0.04	-249.42	0.05	-203.32	0.03
3/29/2007	-247.11	0.52	-242.54	0.02	-249.22	0.20	-201.55	1.77
4/20/2007	-247.17	-0.06	-242.29	0.25	-249.19	0.03	-201.24	0.31
5/25/2007	-246.85	0.32	-242.86	-0.57	-249.11	0.08	-201.24	0.00
6/28/2007	-246.63	0.22	-242.15	0.71	-248.80	0.31	-200.96	0.28
7/26/2007	-245.88	0.75	-242.13	0.02	-248.78	0.02	-200.80	0.16
8/23/2007	-245.96	-0.08	-242.03	0.10	-248.73	0.05	-200.22	0.58
10/25/2007	-244.69	1.10	-242.08	-0.12	-248.73	-1.93	-200.14	0.15
11/19/2007	-242.20	2.49	-242.00	0.08	-249.60	-0.87	-201.05	-0.91
12/21/2007	-235.02	7.18	-241.56	0.44	-249.62	-0.02	-200.08	0.97
1/29/2008	-232.46	2.56	-241.98	-0.42	-249.63	-0.01	-200.03	0.05
2/29/2008	-226.58	5.88	-242.12	-0.14	-249.82	-0.19	-199.52	0.51

	Injection Well 1		Injection Well 2		Injection Well 3		Injection Well 4	
Date	DTB(ft)	Difference	DTB (ft)	Difference	DTB (ft)	Difference	DTB (ft)	Difference
3/27/2008	-220.50	6.08	-241.90	0.22	-249.50	0.32	-199.30	0.22
4/29/2008	-222.50	-2.00	-242.02	-0.12	-249.60	-0.10	-198.98	0.32
5/30/2008	-218.55	3.95	-241.90	0.12	-249.47	0.13	-198.65	0.33
6/26/2008	-218.60	-0.05	-241.95	-0.05	-249.50	-0.03	-198.65	0.00
7/29/2008	-214.98	3.62	-242.20	-0.25	-249.68	-0.18	-198.68	-0.03
8/26/2008	-207.03	7.95	-241.90	0.30	-249.72	-0.04	-198.65	0.03
9/26/2008	-202.40	4.63	-241.93	-0.03	-249.52	0.20	-198.60	0.05
10/27/2008	-200.68	1.72	-241.88	0.05	-249.50	0.02	-198.59	0.01
11/20/2008	-198.05	2.63	-242.12	-0.24	-249.54	-0.04	-198.64	-0.05
12/29/2008	-178.29	19.76	-242.10	0.02	-249.15	0.39	-198.30	0.34
1/26/2009	-167.50	10.79	-241.90	0.20	-248.87	0.28	-198.28	0.02
2/25/2009	-151.20	16.30	-242.00	-0.10	-248.80	0.07	-198.80	-0.52
3/13/2009	-148.68	2.52	-241.87	0.13	-248.94	-0.14	-198.28	0.52
4/17/2009	-148.52	0.16	-241.67	0.20	-249.00	-0.06	-198.10	0.18
5/15/2009	-147.60	0.92	-241.64	0.03	-249.05	-0.05	-198.10	0.00
6/8/2009	-147.50	0.10	-241.60	0.04	-248.95	0.10	-197.92	0.18
7/27/2009	-147.20	0.30	-242.40	-0.80	-249.00	-0.05	-197.90	0.02
8/13/2009	-147.20	0.00	-241.55	0.85	-248.90	0.10	-198.00	-0.10
9/16/2009	-147.20	0.00	-241.50	0.05	-248.90	0.00	-198.00	0.00
10/28/2009	-147.20	0.00	-241.44	0.06	-248.50	0.40	-197.95	0.05
11/19/2009	-146.90	0.30	-241.50	-0.06	-248.53	-0.03	-198.00	-0.05
12/10/2009	-147.40	-0.50	-242.50	-1.00	-249.20	-0.67	-198.10	-0.10
1/22/2010	-147.20	0.20	-241.80	0.70	-248.50	0.70	-198.00	0.10
3/4/2010	-147.28	-0.08	-241.20	0.60	-245.45	3.05	-198.00	0.00
3/24/2010	-144.95	2.33	-241.60	-0.40	-248.30	-2.85	-198.00	0.00
4/19/2010	-147.25	-2.30	-241.65	-0.05	-247.70	0.60	-198.00	0.00
5/26/2010	-147.28	-0.03	-241.80	-0.15	-248.00	-0.30	-198.00	0.00
6/24/2010	-147.18	0.10	-241.72	0.08	-248.80	-0.80	-198.00	0.00
7/27/2010	-144.50	2.68	-241.10	0.62	-248.90	-0.10	-198.00	0.00
8/19/2010	-146.95	-2.45	-241.70	-0.60	-249.05	-0.15	-198.00	0.00
9/14/2010	-146.00	0.95	-241.70	0.00	-249.10	-0.05	-198.00	0.00
10/14/2010	-145.90	0.10	-241.65	0.05	-249.10	0.00	-198.00	0.00
11/8/2010	-144.46	1.44	-241.60	0.05	-249.00	0.10	-198.00	0.00
12/17/2010	-145.83	-1.37	-241.60	0.00	-249.10	-0.10	-198.00	0.00
2/24/2011	-144.50	1.33	-241.60	0.00	-249.10	0.00	-197.98	0.02
3/22/2011	-145.80	-1.30	-241.60	0.00	-248.90	0.20	-198.00	-0.02
4/12/2011	-145.80	0.00	-241.60	0.00	-248.50	0.40	-197.50	0.50
5/23/2011	-148.80	-3.00	-241.60	0.00	-248.40	0.10	-197.50	0.00
6/22/2011	-145.80	3.00	-241.60	0.00	-248.00	0.40	-197.83	-0.33
7/15/2011	-147.28	-1.48	-241.60	0.00	-247.70	0.30	-197.80	0.03
8/12/2011	-145.85	1.43	-241.50	0.10	-248.25	-0.55	-197.80	0.00
9/21/2011	-145.90	-0.05	-241.10	0.40	-248.25	0.00	-197.73	0.07
10/7/2011	-144.30	1.60	-239.95	1.15	-247.90	0.35	-197.75	-0.02
11/17/2011	-145.70	-1.40	-236.70	3.25	-248.72	-0.82	-197.70	0.05
12/2/2011	-145.95	-0.25	-233.80	2.90	-248.30	0.42	-194.65	3.05
1/5/2012	-148.80	-2.85	-233.20	0.60	-247.98	0.32	-197.70	-3.05
2/2/2012	-145.85	2.95	-224.45	8.75	-248.10	-0.12	-197.60	0.10

	Injection Well 1		Injection Well 2		Injection Well 3		Injection Well 4	
Date	DTB(ft)	Difference	DTB (ft)	Difference	DTB (ft)	Difference	DTB (ft)	Difference
3/7/2012	-147.85	-2.00	-223.30	1.15	-248.10	0.00	-197.50	0.10
4/2/2012	-148.80	-0.95	-218.80	4.50	-247.97	0.13	-197.50	0.00
7/20/2012	-145.85	-1.55	-205.55	0.15	-248.00	-31.00	-197.40	0.00
8/16/2012	-144.90	0.95	-205.70	-0.15	-248.10	-0.10	-197.20	0.20
9/20/2012	-145.84	-0.94	-205.70	0.00	-248.09	0.01	-197.10	0.10
11/1/2012	-145.95	-0.11	-205.15	0.55	-248.00	0.09	-197.00	0.10
11/16/2012	-144.30	1.65	-203.90	1.25	-248.15	-0.15	-197.00	0.00



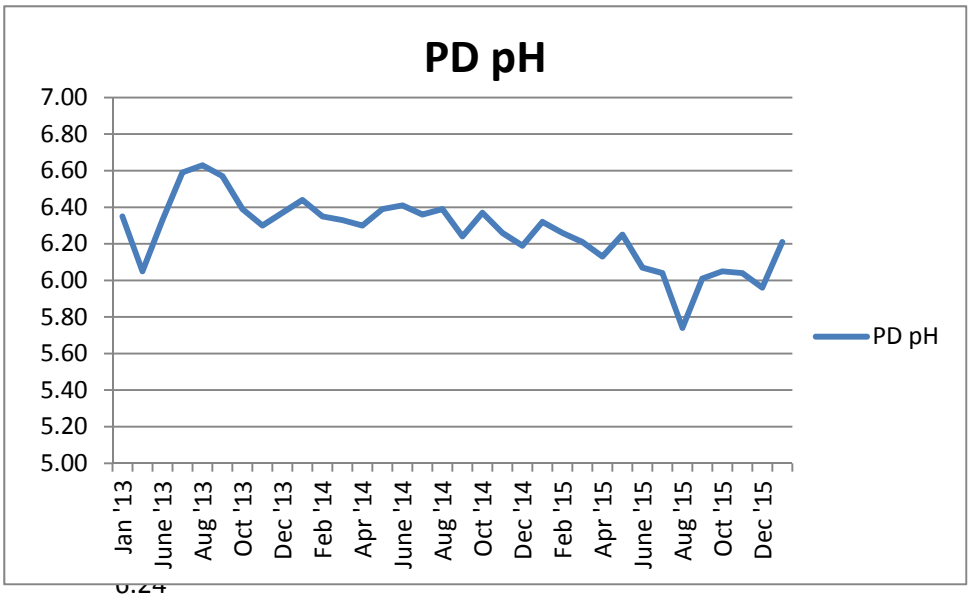
5/20/2014	-145.60	0.00	-154.60	0.20	**-247.20**	0.50	-189.20	1.00
6/30/2014	-144.02	1.58	-154.65	-0.05	-233.00	14.20	-189.20	0.00
7/30/2014	-145.58	-1.56	-130.55	24.10	**-247.70**	-14.70	-188.48	0.72
8/28/2014	-145.50	0.08	-130.50	0.05	**-247.35**	0.35	-188.28	0.20
9/24/2014	-145.50	0.00	-146.16	-15.66	**-246.96**	0.39	**-174.96**	13.32
10/20/2014	-144.05	1.45	-125.50	20.66	**-247.65**	-0.69	**-188.50**	-13.54
12/30/2014	-145.45	-1.40	-106.05	19.45	**-246.95**	0.70	**-188.20**	0.30
1/21/2015	-144.03	1.42	-105.90	0.15	**-246.95**	0.00	**-177.70**	10.50
3/27/2015	-145.55	-1.52	-105.79	0.11	**-247.75**	-0.80	**-188.80**	-11.10
4/15/2015	-145.40	-1.37	-105.85	0.05	**-246.75**	0.20	**-155.90**	21.80
5/26/2015	-145.40	0.00	-105.65	0.20	**-246.75**	0.00	**-185.00**	-29.10
6/22/2015	-145.43	-0.03	-105.70	-0.05	**-247.28**	-0.53	**-184.95**	0.05
7/28/2015	-145.20	0.23	-105.70	0.00	**-246.20**	1.08	**-188.73**	-3.78
8/14/2015	-145.30	-0.10	-105.70	0.00	**-247.20**	-1.00	**-187.40**	-1.33
9/23/2015	-146.30	1.00	-105.72	0.00	**-246.25**	-0.95	**-185.00**	-2.40
10/12/2015	-145.35	0.95	-105.75	-0.03	**-247.14**	-0.89	**-185.02**	-0.02
11/09/2015	-145.25	0.10	-105.90	-0.03	**-246.00**	-0.89	**-185.00**	-0.02
12/4/2015	-145.40	-0.15	-106.10	-0.20	**-246.10**	-0.10	**-185.00**	0.00
1/5/16	-145.43	-0.03	-106.05	0.05	**-246.15**	-0.05	**-187.42**	-2.42

DTB Well Changes

June ' 04 to	Present	**103.07**	**142.45**	**7.05**	**17.58**

TABLE 14-3 - Plant Discharge Monthly Average pH

Month	$pH_{AVG.}$
Jan '13	6.35
May '13	6.05
June '13	
July '13	
Aug '13	
Sept '13	
Oct '13	
Nov `13	
Dec '13	
Jan '14	
Feb '14	
Mar '14	
Apr '14	
May '14	
June '14	
July '14	
Aug '14	
Sept '14	
Oct '14	6.37
Nov '14	6.26
Dec '14	6.19
Jan '15	6.32
Feb '15	6.26
Mar '15	6.21
Apr '15	6.13
May '15	6.25
June '15	6.07
July '15	6.04
Aug '15	5.74
Sept.'15	6.01
Oct '15	6.05
Nov '15	6.04
Dec '15	5.96
Jan '16	6.21



Associated and Referenced Documents

All daily paper worksheets are located at the plant in monthly file folders **(MFF)**
All current data bases and working documents are on the supervisor's computer **(SC**)
File archives have been set up on ProjectWise **(PW)** for older and historic documents and on SharePoint **(SP)** for more recent files.

Document	Location
Daily Worksheets Daily Operating Log Daily activities Summary Report Daily Site Safety Inspection Employee Sign-in Sheet	Original paper copies in MFF Scanned copies on PW, SP
Supporting Worksheets Visitor/Subcontractor Sign-in Sheet Air Monitoring Log Sound Monitoring Worksheet Daily Plant Activity Notes (DPAN) Comprehensive Site Safety Inspections	Original paper copies in MFF Scanned copies on PW, SP
Plant Operator's Daily Log Book	Current book issued to operator, completed books on file in shop cabinet
Plant Manager's Daily Log Book	Current book issued to supervisor, completed books on file in shop cabinet
Daily Database Daily Operations Summary Report	Current database is an Electronic file on manager's computer Electronic copies on SP and MFF
Monthly O&M Report	Electronic file on SP
Monthly Maintenance Log	Electronic file on SP
Corrective Action Summary – formerly Project Status Report and Activities Schedule	Electronic file on SP
Groundwater Elevation and Water Quality Database	Electronic file on SP
Monthly Plant Truck Inspection Worksheet	Electronic file on SP
Stand Alone Documents Claremont O&M Manual Site Safety and Health Plan SOP and Instruction manual Sampling and Analysis Plan Log of Operating System Drawings Emergency Action Plan	Bindered copies in control room, electronic copies on PW
Sampling forms and COC documents	Original paper copies in MFF, Electronic file on SC

Associated documents and worksheets used to generate this report can also be found in the monthly file folders.