PARSONS

40 La Riviere Drive, Suite 350 • Buffalo, New York 14202 • (716) 541-0730 • Fax (716) 541-0760 • www.parsons.com

November 14, 2013

Mr. Michael Hinton
New York State Department of Environmental Conservation (NYSDEC)
Division of Water, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2399

RE: Ekonol Polyester Resins Site (#V00653-9)
Quarterly Report for Groundwater Monitoring
Second Quarter 2013

Dear Mr. Hinton:

Attached is the performance and quarterly monitoring report for the second quarter of 2013 at the Ekonol Polyester Resins Site (Site). The performance and quarterly monitoring scope of work is defined in the February 2010 NYSDEC approved "Remedial Action Work Plan (RAWP) for *In Situ* Treatment Using Enhanced Bioremediation," and the NYSDEC-approved (April 10, 2012) changes to the reporting scope and schedule. Documentation of well inspection and maintenance, and sub-slab depressurization system operations and maintenance is also provided in the report.

If you have any questions, please feel free to contact me at (716) 407-4990.

Sincerely,

George W. Hermance

George Hermance
Project Manager

Attachments

cc: W. Barber, Atlantic Richfield Co.
S. Fiorenza, BP (e-copy)
M. Forcucci, NYSDOH (e-copy)
M. Kolar, Patriot (e-copy)
J. Sabbatis, Saint-Gobain (e-copy)
G. Brown, RT Environmental Services (e-copy)

.

PERFORMANCE MONITORING REPORT
SECOND QUARTER 2013
IN SITU TREATMENT USING ENHANCED BIOREMEDIATION

Ekonol Polyester Resins, NYSDEC # V00653-9
6600 Walmore Road

Town of Wheatfield, Niagara County, New York

SUBMITTED TO:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF HAZARDOUS WASTE REMEDIATION

SUBMITTED BY:

ATLANTIC RICHFIELD COMPANY

A BP affiliated company

4850 East 49th Street
Cuyahoga Heights, Ohio 44125

PREPARED BY:

PARSONS

40 La Riviere Drive, Suite 350
Buffalo, New York 14202

November 2013

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

This report summarizes the July 2013 performance and routine monitoring following installation of the bioremediation systems at the Ekonol Polyester Resins Site (Site). The scope of work is defined in the February 2010 NYSDEC-approved "Remedial Action Work Plan (RAWP) for *In Situ* Treatment Using Enhanced Bioremediation," and the NYSDEC-approved (April 10, 2012) changes to the reporting scope and schedule. Additionally, site management activity including well inspection and maintenance, and sub-slab depressurization system operations and maintenance are also discussed.

2.0 BIOREACTOR AND INJECTION/MONITORING WELL INSPECTION

As part of the July 2013 event, the surface conditions above the bioreactor trenches were inspected for settlement, and the protective casings were inspected for integrity. Inspection records are provided in Attachment A. In July 2013, repair or maintenance of the protective casings or wells associated with the bioreactor was not necessary. There was, however, minor pitting and cracking to the new asphalt between the bioreactor trenches in the same location as previously reported. The manufacturing company in the adjacent building paved a portion of this area as part of a larger paving project. Additional paving will be added, and the need for a more permanent repair is being evaluated.

3.0 SUB-SLAB DEPRESSURIZATION SYSTEM OPERATIONS AND MAINTENANCE

During the July 2013 sampling event, the sub-slab depressurization system was inspected in accordance with the NYSDEC-approved operations and maintenance plan for the system dated December 5, 2011. Results of the inspection identified that the system is in proper working order. The inspection included a visual inspection of the system's interior and exterior components, recording of U-Tube manometer measurements, and smoke stick testing. Additionally, the system was shut down temporarily to confirm that the audible alarm functions as designed. The July 2013 inspection checklist for the SSD system is included in Attachment A. In July 2013, repairs and maintenance to the sub-slab depressurization system were not needed.

4.0 PERFORMANCE AND QUARTERLY MONITORING

In addition to the operations, monitoring and maintenance (OM&M) activities discussed above, the second of four groundwater sampling events scheduled for 2013 was completed in July 2013 in accordance with the approved work plans and previously reported procedures. In addition to monitoring the overall groundwater conditions, performance monitoring was completed to assist in evaluating the effectiveness of the

groundwater remediation from the bioreactor and in the bedrock groundwater treatment area. During this event, a complete round of water levels was collected from the monitoring wells. The water levels, sampling matrix and sampling records are provided in Attachment B.

The analytical results for these samples were reviewed for usability with respect to NYSDEC requirements. The data are provided in the data usability report included in Attachment C. The data are considered valid for its intended use.

5.0 BIOREACTOR PERFORMANCE AND QUARTERLY MONITORING RESULTS

This section presents the most recent concentrations and data trends for the overburden bioreactor bioremediation through the July 2013 sampling event. The performance of the *in situ* bioremediation will be evaluated in detail after the fourth sampling event in 2013 which is planned for December 2013. Notable or anomalous changes in historically observed trends are discussed herein.

OVERBURDEN OBSERVATIONS INSIDE THE BIOREACTOR TRENCHES

Through July 2013, the bioreactors continued to degrade concentrations of CVOCs in overburden groundwater. In general, CVOC concentrations within the trenches remain at significantly decreased levels (Figures 1 and 2) compared to samples taken within the first 3 - 6 months after installation (the installation of the bioreactors was completed in April 2011). TCE, the primary CVOC, was mostly depleted from the shallow groundwater within the first 6 months of remediation (except at PMW-9S), and has remained as such in July 2013. Concentrations of cis-1,2 DCE and VC inside the bioreactor remain depleted with the exception of OR-6SM and OR-9SM, which have shown increasing trends from September 2012 to July 2013.

TOC concentrations have generally continued to decrease in the bioreactor wells, while microbial population results indicate that *Dehalococcoides* (DHC) concentrations decreased within the bioreactor trenches from April 2013 to July 2013.

OVERBURDEN OBSERVATIONS OUTSIDE THE BIOREACTOR TRENCHES

Overall, the overburden groundwater total chlorinated ethene concentration (sum of TCE, DCE, and VC) from PMW wells outside the bioreactors decreased from the June 2011 event (2 months after bioreactor installation) to the July 2013 event (26 months after installation). At individual wells, CVOC (TCE, DCE, VC, etc.) concentrations remain variable, with some wells showing increases, some showing decreases and others remaining relatively unchanged.

At locations outside of the bioreactor trenches, TOC has been depleted, and DCE and VC remain constant, including locations PMW-3S, PMW-4S, and PMW-6S.

Between the bioreactors, little evidence of increased TOC concentrations and biodegradation have been observed, with the exception of PMW-2S (south of former containment area). TOC continues to be low between and downgradient of the bioreactor trenches in the shallow performance monitoring wells. Due to the low hydraulic conductivity of the fine-grained silt, clay and sand soils (less than 1 feet/day), it is expected that the transport of TOC and associated expansion of the treatment zone will be slow. Locations between the bioreactors will continue to be further evaluated over time to determine if the treatment zone is expanding.

Locations of the highest and most persistent CVOC concentrations in the overburden remain in:

- the area of the former secondary containment excavation (e.g. well MW-2S) which was backfilled with gravel and included remediation piping. This area is and historically was a groundwater mound,

- adjacent to the sewer line downgradient of the excavation, where the trenches were not installed.

OVERBURDEN OBSERVATIONS - OTHER WELLS

Side and down-gradient shallow wells farther away from the bioreactors (over 150 feet), generally showed a decreasing CVOC trend over the long term.

6.0 BEDROCK REMEDIATION PERFORMANCE AND QUARTERLY MONITORING RESULTS

This section presents notable and anomalous observations related to historical trends in the recent concentrations for the bedrock remediation system through the July 2013 sampling event. The performance of the *in situ* bioremediation will be evaluated in more detail after the fourth sampling event in 2013 which is planned for December 2013.

BEDROCK BIOREMEDIATION PERFORMANCE SUMMARY

Figures 3 and 4 provide data tables and time-series plots of key CVOCs, total ethene and ethane, and TOC concentrations for the bedrock injection and monitoring wells.

The data indicated a continuation of enhanced CVOC biodegradation attributed to the November 2012 injection. The enhanced degradation patterns observed in December 2012 has been sustained (TCE decreased, DCE increased, ethane/ethene (E+E) increased) or progressed further (TCE decreased and DCE increased then decreased). Wells that showed the degradation patterns defined above include INJ-1, INJ-7D, INJ-11D, INJ-13D, PMW-2D, PMW-9D, PMW-14D, PMW-17D, and RMW-4D. An area of decreased sulfide, elevated iron, and increased E+E concentration relative to December

2012 substrate injection extends from INJ-7D to INJ-2 and south from PMW-12D to PMW-15D.

Within the source area and about 60 ft downgradient (PMW-16D), the average total molar chlorinated ethene and ethane concentrations have increased during the remediation. Slightly farther downgradient from the source area, as well as the locations farthest downgradient, the average total chlorinated ethene and ethane concentrations have decreased since the first substrate applications in July 2011.

Groundwater elevation data indicate the groundwater flow conditions have remained similar since the initial June 2011 substrate injections. Groundwater flow is generally southerly across the site with no apparent changes from the bioremediation.

PERFORMANCE ENHANCEMENT TESTING

Previous sampling results indicated the bedrock remediation was limited by geochemical conditions (low pH and elevated hydrogen sulfide). Wells with the highest degradation rates had a pH above approximately 6.5 SU and/or hydrogen sulfide approximately less than 30 mg/L. As previously discussed, tests were conducted during the November 2012 substrate injections to mitigate potential limitations to the performance of the bedrock remediation system. The tests included addition of calcium carbonate buffer, instead of sodium bicarbonate, throughout the 2012 injection area to raise the pH and addition of iron at INJ-7D to remove hydrogen sulfide, during the substrate injections. Review of the analytical data to date provided the following observations:

- **pH:** The calcium carbonate appeared to lack enough buffering capacity to prevent the initial pH drop (5.5 – 6.0). Although the buffer appeared to assist in bringing the pH above 6.0 in the July 2012 sampling event, most wells near the injection area were below the target 6.5 SU, which appears to be a more optimum pH at Ekonol, see Figure 5.

- **INJ-7D Iron Injection:** Injection of iron (soluble and mineral sources) during the November 2012 substrate injection event resulted in significant increases in iron and decreases in sulfides (for example wells INJ-7D, INJ-12D, PMW-9D, PMW-15D, and RMW-2D) that have persisted in groundwater, see Figure 6 (A and B). There is also evidence that iron has migrated downgradient to the northern perimeter of the pilot area, as increases in iron and decreases in sulfides can be seen in INJ-01 and INJ-02. Increases in ethene plus ethane and/or DHC were observed in INJ-7D as well as locations downgradient of this well (INJ-9D, INJ-10D, INJ-12D, INJ-13D, PMW-9D, PMW-10D, PMW-12D, PMW-13D, PMW-17D and RMW-2D). Based on the results from the iron injections at INJ-7D, it appears that sulfide can be effectively controlled, and that iron will improve the rate of CVOC biodegradation.

These results indicate that biodegradation has been improved since the November 2012 injection. Future activities will focus on testing and isolating the best conditions for optimal bioremediation (see below).

7.0 GENERAL SITE CONCLUSIONS AND ANTICIPATED FUTURE ACTIVITIES

Bioreactor: Results of the July 2013 data indicate that TOC has largely been depleted and that the addition of vegetable oil substrate to the bioreactor trenches is needed to enhance TOC migration and CVOC biodegradation. Additionally, the data indicate that iron should be included in the injections in order to mitigate sulfide in the trenches. Pitting of the surface pavement will be repaired, as necessary. Treatment (injection of TOC) in the gravel within the former excavation and injection in the trenches may improve performance in the area of highest CVOC concentration surrounding the bioreactor.

Bedrock Bioremediation Area: The data to date suggest that the remediation program has not operated to the fullest potential in the bedrock source area. The iron injection test in the bedrock source area indicates that sulfide can be effectively controlled, and it appears that iron will improve the rate of CVOC biodegradation. Downgradient concentrations of CVOCs, particularly TCE, continue to decrease, indicating an overall positive performance of the bedrock remediation system.

Additional testing is currently being evaluated to optimize the use of emulsified vegetable oil substrate, iron, pH buffer, and nutrients, while maintaining sufficient TOC in order to enhance CVOC biodegradation in the bedrock system.

FIGURES

15 0 30

SCALE IN FEET

LEGEND:

- RAILROAD TRACKS
- NEW BORING WELL (POST 2010)
- REPLACEMENT BEDROCK INVESTIGATION WELL
- OLD BORING WELL (PRE 2010)
- FW — FIRE WATER LINE
- G — GAS LINE
- SAN — SANITARY LINE
- STM — STORM LINE
- CB — CATCH BASIN
- MH — MANHOLE
- MULCH AND GRAVEL BIOREACTOR
- EDGE OF NEW ASPHALT

MW-1S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1.5 J	17	8.4	14
Total DCE	115.24	179.3	146.9	178.8
VC	7.8	15	7.7	12
TCA	0.8 U	0.8 U	0.8 U	0.8 UJ
DCA	1 U	1 U	1 U	1 U
Ethene	1.2 J	1.2 J	1 U	1 U
TOC	2.7	1.1	1.6	1.3
Sulfate	2120	2130	2030	2000

OR-5SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 U	1 U	1 U
Total DCE	8	4.2	75.4	2.4
VC	16	13	230	1.6 J
TCA	0.8 U	0.8 U	0.8 U	0.8 U
DCA	1.2 J	1.2 J	1 U	1.4 J
Ethene	23 J	20	400	9.5
TOC	36.4	32.5	12.8	20.1
Sulfate	1.5 UJ	1.9 J	276	3 J

PMW-2S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	2.7 J	88	1.5 J	1.1 J
Total DCE	582.6	283.8	187.9	58.3
VC	490	220	130	37
TCA	1.6 U	0.8 U	0.8 U	0.8 UJ
DCA	2 U	1.1 J	1.2 J	1.8 J
Ethene	130	110	74	100
TOC	44.7	19.4	6.6	20.7
Sulfate	7.6	34.1	319	4 J

PMW-1S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1.9 J	1.7 J	110	4.8 J
Total DCE	300.4	432.3	729.5	337.2
VC	310	410	380	270
TCA	0.8 U	0.8 U	0.8 U	0.8 U
DCA	1.3 J	1.4 J	5.5	7.1
Ethene	1000	420	340	360
TOC	15.6	7.2	20.3	37
Sulfate	51.7 J	95.9	136	46.4

OR-9SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1.1 J	1.7 J	1.5 J	4.1 J
Total DCE	307.2	355.5	536.1	1919.3
VC	150	130	290	540
TCA	9.9	17	13	27
DCA	7.4	7.1	6.7	12
Ethene	46	29	160	66
TOC	67.1	26.6	13.9	19.3
Sulfate	30.6 J	82.4	172	97.6

MW-2S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	210 J	760	2000	1400
Total DCE	242550	232320	252360	222130
VC	33000	27000	28000	18000
TCA	80 U	80 U	47 J	80 U
DCA	100 U	100 U	38 J	100 U
Ethene	450	280	230	130
TOC	4.7	5	4	4.3
Sulfate	1090 J	1130	1230	1130

OR-3SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 UJ	1 U	10 U
Total DCE	8.6	2.4	2.4	24
VC	1 U	1 UJ	1 U	10 U
TCA	0.8 U	0.8 UJ	0.8 U	8 U
DCA	1 U	1 UJ	1 U	10 U
Ethene	1 U	1.2 J	1 U	1 U
TOC	293	171	69.4	40.1
Sulfate	1.5 UJ	1.7 J	276	13.7

PMW-5S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	2400	1600	2300	1900
Total DCE	56792	29597	39789	37778
VC	10000	4900	7800	7200
TCA	9.3 J	16 U	4 U	8 U
DCA	13	20 U	11 J	11 J
Ethene	360	180	350	230
TOC	5.3	10.3	5.9	8
Sulfate	1310	1000	1390	1440

MW-9S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	2 U	1 U	1 U	1 U
Total DCE	938.1	747.5	1113.1	484.9
VC	510	320	640	360
TCA	1.6 U	0.8 U	2.6 J	0.8 U
DCA	2.8 J	3.6 J	7.7	3.6 J
Ethene	20	20	35	25
TOC	5.8	4.6	5.8	7.5
Sulfate	2300	1990	2480	2530

OR-4SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 U	6.9	10 U
Total DCE	7.2	3.1	2.6	24
VC	1 U	1 U	1 U	10 U
TCA	0.8 U	0.8 U	0.8 U	8 U
DCA	1 U	1 U	1 U	10 U
Ethene	1 U	1 U	1 U	1 U
TOC	79.7	68.3	54.6	52
Sulfate	1.5 UJ	1.8 J	2.8 J	5.2

PMW-6S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	10 U	4.1 J	10 U	2.1 J
Total DCE	1596	3400.5	3418	1714
VC	2700	2400	1900	1600
TCA	8 U	1.6 U	8 U	0.8 U
DCA	10 U	6.3 J	10 U	3.7 J
Ethene	320	360	450	220
TOC	56.3	48.2	39.8	50.5
Sulfate	140 J	209	184 J	85.5

OR-6SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 U	3.6 J	9.3 J
Total DCE	16.6	94.8	9167.3	10336.7
VC	4.4 J	74	3000	3100
TCA	0.8 U	0.8 U	3.6 J	2 U
DCA	1 U	1 U	12	14
Ethene	1 U	20	660	670
TOC	150	91	64.9	85
Sulfate	1.5 UJ	53.6	254	90.2

MW-4S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	2.1 J	8	39	10
Total DCE	122.4	340	3463	543.4
VC	210	260	1700	470
TCA	0.8 U	0.8 U	4 U	1.3 J
DCA	1.2 J	1.3 J	6.2 J	2 J
Ethene	94	110	380	89
TOC	7	2.5 U	9.2	5.1
Sulfate	3710 J	2200	2320	3420

PMW-7S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 U	1 U	1 U
Total DCE	5.3	11.4	5.3	6.6
VC	11	1 U	4.3 J	1.3 J
TCA	0.8 U	0.8 U	0.8 U	0.8 U
DCA	60	150	49	78
Ethene	1 U	1 U	1.7 J	1 U
TOC	5.1	3.5	4	4.5
Sulfate	3900	2620	3300	3060

PMW-3S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	210 J	600	330	310 J
Total DCE	39820	36450	29554	45893
VC	8500	13000	4900	7600 J
TCA	40 U	40 U	16 U	80 UJ
DCA	50 U	50 U	24 J	100 U
Ethene	800	430	1500	1300
TOC	31.2	12.8	13.7	15.9
Sulfate	228	883	950	648

PMW-4S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	230	230	270	180
Total DCE	11290	14372	13433	12376
VC	1300	860	1100	830
TCA	8 U	16 U	0.8 U	8 U
DCA	12 J	20 U	19	14 J
Ethene	180	53	48	31
TOC	5.8	3.7	2.7	3.4
Sulfate	1510	1980	1770	1770

MW-6S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 U	1 U	1 U
Total DCE	33.3	30.6	3.5	98.7
VC	250	110	1.3 J	230
TCA	1.1 J	0.8 U	0.8 U	1.1 J
DCA	8.5	2.8 J	1 U	5.3
Ethene	5.8	3.3 J	1 U	4.6 J
TOC	#N/A	#N/A	#N/A	#N/A
Sulfate	#N/A	#N/A	#N/A	#N/A

MW-12S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	4500	740	1800	2700
Total DCE	3037	1119.5	984.6	2947.7
VC	450	280	210	510
TCA	88	74	51	45
DCA	55	53	45	49
Ethene	210	320	400	320
TOC	#N/A	#N/A	#N/A	#N/A
Sulfate	#N/A	#N/A	#N/A	#N/A

OR-10SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 U	1 U	1 U
Total DCE	4.4	5	2.44	2.44
VC	1 U	13	1 U	1 U
TCA	0.8 U	0.8 U	0.8 U	0.8 U
DCA	1 U	1 U	1 U	1.1 J
Ethene	1 U	16 J	1.2 J	1 U
TOC	83.8	39.5	31.2	33.7
Sulfate	1.5 UJ	34.1	226	107

PMW-8S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1.2 J	4.4 J	2 J	3.3 J
Total DCE	35.4	316.1	65.4	153
VC	52	210	150	200
TCA	24	26	14	9.2
DCA	30	22	13	12
Ethene	340	160	280	320
TOC	52.4	11	7.8	9.6
Sulfate	823	1460	1670	1790

MW-3S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 U	1 U	1 U
Total DCE	2.4	2.4	2.4	2.4
VC	1 U	1 U	1 U	1 U
TCA	0.8 U	0.8 U	0.8 U	0.8 U
DCA	1 U	1 U	1 U	1 U
Ethene	1 U	1 U	1 U	1.5 J
TOC	12.4	8.4	8.3	8.4
Sulfate	529	662	254	342

OR-14SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	10 U	5 U	1 U	5 U
Total DCE	24	12	2.45	8.8
VC	10 U	5 U	1 U	1 U
TCA	8 U	4 U	0.8 U	4 U
DCA	10 U	5 U	1 U	5 U
Ethene	1 U	3.8 J	5.2	6.9
TOC	162	143	68.1	99.1
Sulfate	51.9	197	231	319

PMW-10S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	2.6 J	1.4 J	1 U	7.6
Total DCE	3.3	2.4	2.4	2.56
VC	1 U	1 U	3.2 J	1.3 J
TCA	0.8 U	0.8 U	0.8 U	0.8 UJ
DCA	1 U	1 U	1 U	1 U
Ethene	1 U	1 U	1 U	1 U
TOC	2.8	2.6	2	1.9
Sulfate	2980	2930	2770	2840

MW-11S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	140	110	44	84
Total DCE	317.1	159.3	191.3	160.2
VC	230	54	160	75
TCA	8.8	3.5 J	14	11
DCA	34	13	48	44
Ethene	62	18	97	80
TOC	#N/A	#N/A	#N/A	#N/A
Sulfate	#N/A	#N/A	#N/A	#N/A

OR-13SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	5 U	1 U	1 U	1.2 J
Total DCE	12	3.8	3.4	2.7
VC	5 U	1 U	1 U	1 U
TCA	4 U	0.8 U	0.8 U	0.8 U
DCA	5 U	1 U	1.9 J	1 U
Ethene	1 U	1 U	5.2	1.1 J
TOC	146	95.4	54.9	54.8
Sulfate	1.5 U	14.6	50	3.5 J

OR-18SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 U	1 U	1 U
Total DCE	14.2	167.8	19.1	7.9
VC	30	210	22	14
TCA	0.8 U	0.8 U	0.8 U	0.8 U
DCA	1 U	1 U	1 U	1 U
Ethene	190	340	27	26
TOC	88.1	27.4	22.3	5.7
Sulfate	255 J	257	226	398

PMW-11S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	390	340	310	230
Total DCE	17312	16251	15253	12225
VC	3600	2400	3100	2200
TCA	16 U	8 U	4 U	8 U
DCA	46 J	43 J	42	36 J
Ethene	300	180	390	220
TOC	1.9	2	2.5	2.7
Sulfate	1960 J	1960	1650	1470

MW-10S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	4.9 J	3.2 J	3 J	4.9 J
Total DCE	435.8	312.8	337.71	353.8
VC	810	280	280	250
TCA	0.8 U	0.8 U	0.8 U	0.8 U
DCA	1.2 J	1 U	1 U	1 U
Ethene	1700	380	280	570
TOC	#N/A	#N/A	#N/A	#N/A
Sulfate	#N/A	#N/A	#N/A	#N/A

OR-15SM	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1 U	1 U	1 U	10 U
Total DCE	2.4	2.4	2.4	24
VC	1 U	1 U	1 U	10 U
TCA	0.8 U	0.8 U	0.8 U	8 U
DCA	1 U	1 U	1 U	10 U
Ethene	1 U	1 U	1 U	1 U
TOC	237	250	177	173
Sulfate	1.5 UJ	1.5 U	1.5 U	1.5 U

PMW-9S	Sep-12	Dec-12	Apr-13	Jul-13
TCE	2400	4100	4700	5400
Total DCE	1320.3	6574	2538	2529.9
VC	49	12 J	49	40
TCA	1.6 U	8 U	1.6 J	4 UJ
DCA	2 U	10 U	1 U	5 U
Ethene	10	1 U	2.7 J	2.3 J
TOC	4.7	4.6	2.7	2.7
Sulfate	3380	3420	2930	3310

NOTES: UTILITY LOCATIONS ARE APPROXIMATE. OTHER UTILITIES MAY EXIST.
NS = NOT SAMPLED
TOC and Sulfate are displayed in mg/L, all other parameters are in ug/L

ATLANTIC RICHFIELD COMPANY

FIGURE 1

EKONOL POLYESTER
6600 WALMORE ROAD
NIAGARA FALLS, NY

OVERBURDEN WELL CONCENTRATIONS

PARSONS
40 LA RIVIERE DR, SUITE 350, BUFFALO, NY 14202 PHONE: 716-541-0730

447355.03000
\\buffs01\pctgprojects\Ekonol\447355 P&O Monitoring\Reporting\Quarterly Reports\Review 07/25/12

15 0 30

SCALE IN FEET

LEGEND:

- RAILROAD TRACKS
- NEW BORING WELL (POST 2010)
- REPLACEMENT BEDROCK INVESTIGATION WELL
- OLD BORING WELL (PRE 2010)
- FW — FIRE WATER LINE
- G — GAS LINE
- SAN — SANITARY LINE
- STM — STORM LINE
- CB — CATCH BASIN
- MH — MANHOLE
- MULCH AND GRAVEL BIOREACTOR
- EDGE OF NEW ASPHALT

CONCENTRATIONS OF CHLOROETHENES
WELL MW-1S

CONCENTRATIONS OF CHLOROETHENES
WELL OR-5SM

CONCENTRATIONS OF CHLOROETHENES
PMW-1S

CONCENTRATIONS OF CHLOROETHENES
PMW-2S

CONCENTRATIONS OF CHLOROETHENES
WELL MW-2S

CONCENTRATIONS OF CHLOROETHENES
WELL OR-9SM

CONCENTRATIONS OF CHLOROETHENES
WELL OR-13SM

CONCENTRATIONS OF CHLOROETHENES
WELL OR-8SM

CONCENTRATIONS OF CHLOROETHENES
WELL OR-3SM

CONCENTRATIONS OF CHLOROETHENES
WELL OR-18SM

CONCENTRATIONS OF CHLOROETHENES
PMW-8S

CONCENTRATIONS OF CHLOROETHENES
WELL MW-9S

CONCENTRATIONS OF CHLOROETHENES
PMW-11S

CONCENTRATIONS OF CHLOROETHENES
WELL OR-4SM

CONCENTRATIONS OF CHLOROETHENES
PMW-6S

CONCENTRATIONS OF CHLOROETHENES
PMW-9S

CONCENTRATIONS OF CHLOROETHENES
WELL MW-10S

CONCENTRATIONS OF CHLOROETHENES
WELL MW-4S

CONCENTRATIONS OF CHLOROETHENES
PMW-8S

CONCENTRATIONS OF CHLOROETHENES
WELL OR-14SM

CONCENTRATIONS OF CHLOROETHENES
WELL OR-15SM

CONCENTRATIONS OF CHLOROETHENES
WELL PMW-3S

CONCENTRATIONS OF CHLOROETHENES
PMW-7S

CONCENTRATIONS OF CHLOROETHENES
WELL OR-10SM

CONCENTRATIONS OF CHLOROETHENES
PMW-10S

CONCENTRATIONS OF CHLOROETHENES
PMW-4S

CONCENTRATIONS OF CHLOROETHENES
WELL MW-6S

CONCENTRATIONS OF CHLOROETHENES
WELL MW-3S

CONCENTRATIONS OF CHLOROETHENES
WELL MW-11S

CONCENTRATIONS OF CHLOROETHENES
WELL MW-12S

NOTES: UTILTY LOCATIONS ARE APPROXIMATE OTHER UTILITIES MAY EXIST FINAL LOCATIONS WILL BE DEPENDENT UPON SITE CONDITIONS AND PLANT OPERATIONS
NS = NOT SAMPLED

ATLANTIC RICHFIELD COMPANY

EKONOL POLYESTER
6600 WALMORE ROAD
NIAGARA FALLS, NY

FIGURE 2
OVERBURDEN TIME SERIES PLOTS

PARSONS
40 LA RIVIERE DR, SUITE 350, BUFFALO, NY 14202 PHONE: 716-541-0730

447355.02000
P:\Ekonol\447355 P&Q Monitoring\Reporting\Quarterly Reports\4Q12 Final\Figure 2 Ekonol Dec 2012 rem area-Shallow Conc. Charts.pdf

30 15 0 30

SCALE IN FEET

LEGEND:

- RAILROAD TRACKS
- NEW BORING WELL (POST 2010)
- REPLACEMENT BEDROCK INVESTIGATION WELL
- OLD BORING WELL (PRE 2010)
- FW — FIRE WATER LINE
- G — GAS LINE
- SAN — SANITARY LINE
- STM — STORM LINE
- CB — CATCH BASIN
- MH — MANHOLE
- MULCH AND GRAVEL BIOREACTOR

INJ-07D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	250000	330000	340000	360000
Total DCE	64300	75196	282360	381110
VC	250 J	260 J	1300	3800
TCA	760	230 J	48	120 J
DCA	100 U	100 U	71	100 U
Ethene	24	23	340	290
TOC	66.8	924	935	703
Sulfate	85.5 J	92.4	293	327

PMW-9D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	67000	75000	52000	51000
Total DCE	120530	170480	200490	190420
VC	3500	810	1300	1700
TCA	120 J	200 J	16 U	40 U
DCA	100 U	100 U	51 J	50 U
Ethene	120	100	340	1200
TOC	109	4420	2110	1040
Sulfate	5.1	15.8	43.3	46.4

RMW-2D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	130000	410000	300000	240000
Total DCE	392'0	62139	150290	171600
VC	200 J	240 J	450 J	1000 U
TCA	480 J	160 J	210 J	800 U
DCA	110 J	84 J	160 J	1000 U
Ethene	4.3 J	12	54	240
TOC	128	1620	1170	758
Sulfate	264 J	395	266	217

INJ-08D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1400	27 J	6.3 J	10 U
Total DCE	2434.7	9546	9827	3524
VC	350	180	2300	9400
TCA	760	190	110	40 J
DCA	99	28 J	200	320
Ethene	19	12	63	450
TOC	46.5	299	463	509
Sulfate	121 J	1.6 J	7.3 J	1.5 U

PMW-11D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	2400	1300	670	760
Total DCE	3925	8082	7731	8601
VC	11	64 J	240	1000
TCA	43000	29000	32000	30000
DCA	310	460	470	800
Ethene	1 U	3.8 J	18	48
TOC	8.6	268	32.6	21.6
Sulfate	542	309	520	409

BUILDING No. 4

PREVIOUS EXCAVATION AREA

SLIDING BAY DOOR

BLD. EXT.

WALMORE ROAD

INJ-11D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	500	200000	72000	40000
Total DCE	14101	83390	170460	180500
VC	1300	2700	1700	3500
TCA	1000	170 J	170	160 U
DCA	130	100 U	78	200 U
Ethene	120	460	420	440
TOC	3.5	852	270	265
Sulfate	812 J	337	325	334

INJ-12D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	820	14000	10000	31000
Total DCE	764.7	120320	94190	130320
VC	38	710 J	2100	2800
TCA	1.6 U	160 UJ	120	160 U
DCA	2 U	200 UJ	70	200 U
Ethene	1.5 J	55	990	1200
TOC	8.6	1420	659	858
Sulfate	24.7	86.5	36.1	92.3

PMW-1D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	860	180	230 J	12
Total DCE	17077	36216	43220	755.63
VC	2200	840	3100	60
TCA	200	18 J	40 U	0.95 J
DCA	43 J	20 U	50 U	1 U
Ethene	57 J	49	140	20
TOC	6.4	1550	1380	73.6
Sulfate	700 J	6.8	5.5 J	4.8 J

INJ-13D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	100000	9800	15000	33000
Total DCE	21160	130480	110230	120270
VC	640	1600	1800	2300
TCA	680	160 UJ	110	80 U
DCA	100 U	200 UJ	79	100 U
Ethene	63	130 J	680	1400
TOC	13.9	1420	767	608
Sulfate	703	57.2	80.4	135

PMW-2D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	16000	9500	700	1100
Total DCE	91350	150410	130231	76146
VC	2100	2500	1500	2300
TCA	40 U	80 U	40 U	40 UJ
DCA	50 U	100 U	56 J	50 U
Ethene	200	160	140	120
TOC	215	790	821	288
Sulfate	118	99.5	41.6	180

INJ-01	Sep-12	Dec-12	Apr-13	Jul-13
TCE	32000	3600	5300	4100
Total DCE	49200	100190	150330	120241
VC	5700	2800	3600	3900
TCA	290	86 J	80 U	80 UJ
DCA	58 J	100 U	140 J	120 J
Ethene	440	310	190	370
TOC	79.5	1640	1080	780
Sulfate	54.2	498	304	202

PMW-3D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	5600	3000	1700	7400
Total DCE	13056	16042	25080	66155
VC	290	270	350	1100
TCA	33 J	11 J	40 U	17 J
DCA	33 J	26	50 U	83 J
Ethene	58	18	28	72
TOC	148	345	323	418
Sulfate	601	752	309 J	203

PMW-4D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	15000	930	730	470
Total DCE	30142	51085	24135	39104
VC	960	700	2500	1200
TCA	130	61 J	40 U	16 U
DCA	71 J	96 J	61 J	94 J
Ethene	150	110	620	210
TOC	120	1020	85.5	253
Sulfate	256 J	283	895	151

RMW-4D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	11000	4300	2100	3200
Total DCE	18084	48087	31095	31102
VC	1000	950	1300	1400
TCA	96	72 J	22 J	40 U
DCA	45 J	94 J	66 J	71 J
Ethene	350	360	420	390
TOC	82.8	754	197	368
Sulfate	111 J	496	1090	51.7

PMW-7D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	27000	1200	840	1400
Total DCE	32136	51096	28093	21110
VC	900	850	1000	1300
TCA	260	78 J	140	49 J
DCA	81 J	120 J	190	100 J
Ethene	170	280	430	340
TOC	29.1	589	60.5	36.7
Sulfate	358 J	965	1300	1150

PMW-12D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	5600	1100	1300	1600
Total DCE	250760	98232	19067	230500
VC	280 J	460	120	4800
TCA	200 J	76 J	8.6 J	160 U
DCA	200 U	90 J	16	200 U
Ethene	120	77	8.9	440
TOC	87.8	3900	92.3	1150
Sulfate	6.5 J	3.9 J	6.8	9.4

PMW-6D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	660	880	2400	460
Total DCE	5163.7	38116	44132	14058
VC	2100	1800	1000	480
TCA	3.8 J	16 U	40 U	16 U
DCA	46	74 J	83 J	30 J
Ethene	1300 J	330	99	210
TOC	563	502	466	366
Sulfate	2.1 J	24.1	428 J	401

MW-7D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	20000	100 U	190 J	1300
Total DCE	31137	110190	64211	59171
VC	1000	930	740	1200
TCA	200	260 J	2600	900
DCA	110	520	1000	1100
Ethene	370	250	79	180
TOC	27.9	935	210	178
Sulfate	579 J	7.5	10 J	37.9

RMW-3D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	170	200	99	42 J
Total DCE	3276	4902	4330	3562
VC	27 J	14 J	51	61
TCA	18000	19000	17000	17000
DCA	130	150	210	160
Ethene	1 UJ	1 U	3.4 J	2.8 J
TOC	8.2	23.6	21.2	3.8
Sulfate	552 J	435	471	574

PMW-17D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	6400	5100	370	1500
Total DCE	6782	23077	10109	15410
VC	190	280	360	790
TCA	3000	1300	5600	29000
DCA	420	520	860	2300
Ethene	7.6	6	10	140
TOC	43.8	547	230	181
Sulfate	210	21.2	21 J	40.4

INJ-09D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	32	26000	12000	3700
Total DCE	251.78	90094	81127	120250
VC	56	340	720	13000
TCA	24	190	170	150 J
DCA	1.8 J	80 J	100	210 J
Ethene	1 U	27	80	680
TOC	10.9	1320	709	679
Sulfate	3 J	21.9	15.9	31.9

MW-11D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	9.1	7.2	9.6	5.3
Total DCE	157.7	124.5	220.9	104.1
VC	67	47	160	69
TCA	320	270	630	290 J
DCA	26	26	55	35
Ethene	2.1 J	1.3 J	6.9	2.3 J
TOC	#N/A	#N/A	#N/A	#N/A
Sulfate	#N/A	#N/A	#N/A	#N/A

PMW-10D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	1000	52000	7800	860
Total DCE	24082	190320	140370	91210
VC	360	520 J	3300	3400
TCA	130	370 J	380 J	220
DCA	200	200 U	260 J	210
Ethene	77	35	280	360
TOC	310	878	652	414
Sulfate	27.4	6.7	22.9	4.1 J

INJ-10D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	14	220	47	18 J
Total DCE	580.2	8035	9952	4529
VC	190	220	1200	1100
TCA	1000	590	400	760
DCA	55	86	280	400
Ethene	40	6.3	430	890
TOC	17.4	152	629	553
Sulfate	425	53.6	4.1 J	71

PMW-15D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	2900	540	3200	1100
Total DCE	14580	19243	14647	10513
VC	970	550	370	4100
TCA	58000	7700	48000	16000
DCA	3800	1600	3100	7400
Ethene	22	10	19	140
TOC	108	739	421	480
Sulfate	106	44.3	139	3.2 J

PMW-14D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	23000	16000	2100	1000
Total DCE	65262	77152	95210	74160
VC	800	550	1100	1100
TCA	240 J	500	740	300 J
DCA	480	430 J	770	730
Ethene	310	92	460	300
TOC	826	1450	765	838
Sulfate	21.8	76.6	11.7 J	2.7 J

MW-21D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	11	3.1 J	5.4	2.8 J
Total DCE	2624.8	2219.3	792.3	391.4
VC	580	1000	730	600
TCA	160	240	260	160
DCA	32	35	41	29
Ethene	9.7	12	11	12
TOC	#N/A	#N/A	#N/A	#N/A
Sulfate	#N/A	#N/A	#N/A	#N/A

MW-20D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	390	100	47	37
Total DCE	3662	3049.5	1761.6	2774.7
VC	160	120	330	470
TCA	9800	7700	3700	4000
DCA	620	410	290	490
Ethene	2.7 J	2.9 J	22	16
TOC	#N/A	#N/A	#N/A	#N/A
Sulfate	#N/A	#N/A	#N/A	#N/A

PMW-16D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	240	5500	5300	12000
Total DCE	221.61	67103	47133	64300
VC	56	470	1500	1000
TCA	4.8 J	770	1500	8900
DCA	1.2 J	430	950	2000
Ethene	1 U	45	730	170
TOC	7.3	728	370	294
Sulfate	27.4 J	219	28.7	16.5

PMW-13D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	66000	280000	85000	90000
Total DCE	110560	120320	120800	210600
VC	350 J	340 J	520 J	2800
TCA	80 U	280 J	400 U	160 U
DCA	120 J	160 J	500 U	290 J
Ethene	380	33	200	330
TOC	367	12.5 U	1500	1020
Sulfate	87.3 J	93	46.4 J	45.3

MW-17D	Sep-12	Dec-12	Apr-13	Jul-13
TCE	6.4	5.9	3.4 J	2.6 J
Total DCE	249.1	175.7	78.6	50.1
VC	110	79	50	47
TCA	420	330	210	130 J
DCA	37	35	29	31
Ethene	1.4 J	1.6 J	1.4 J	2.5 J
TOC	#N/A	#N/A	#N/A	#N/A
Sulfate	#N/A	#N/A	#N/A	#N/A

NOTES: UTILTY LOCATIONS ARE APPROXIMATE. OTHER UTILITIES MAY EXIST.
NS = NOT SAMPLED
TOC and Sulfate are displayed in mg/L, all other parameters are in ug/L.

ATLANTIC RICHFIELD COMPANY

FIGURE 3

EKONOL POLYESTER
6800 WALMORE ROAD
NIAGARA FALLS, NY

BEDROCK WELL CONCENTRATIONS

PARSONS
40 LA RIVIERE DR, SUITE 350, BUFFALO, NY 14202 PHONE: 716-541-0730

447355.03000
\\buffs01\pctgprojects\Ekonol\447355 P&G Monitoring\Reporting\Quarterly Reporting\Review\ 07/25/12

30 15 0 30

SCALE IN FEET

LEGEND:

- RAILROAD TRACKS
- NEW BORING WELL (POST 2010)
- REPLACEMENT BEDROCK INVESTIGATION
- OLD BORING WELL (PRE 2010)
- FW — FIRE WATER LINE
- G — GAS LINE
- SAN — SANITARY LINE
- STM — STORM LINE
- CB — CATCH BASIN
- MH — MANHOLE
- MULCH AND GRAVEL BIOREACTOR

CONCENTRATIONS OF CHLOROETHENES INJ-11D

CONCENTRATIONS OF CHLOROETHENES INJ-07D

CONCENTRATIONS OF CHLOROETHENES PMW-9C

CONCENTRATIONS OF CHLOROETHENES WELL RMW-2D

CONCENTRATIONS OF CHLOROETHENES INJ-08D

CONCENTRATIONS OF CHLOROETHENES PMW-10D

CONCENTRATIONS OF CHLOROETHENES INJ-13D

JILDING No. 4

EVIOUS EXCAVATION AREA

SLIDING BAY DOOR

BLD. EXT.

CONCENTRATIONS OF CHLOROETHENES WELL INJ-09D

CONCENTRATIONS OF CHLOROETHENES PMW-11D

ORE RO

CONCENTRATIONS OF CHLOROETHENES PMW-1D

CONCENTRATIONS OF CHLOROETHENES INJ-12D

CONCENTRATIONS OF CHLOROETHENES INJ-10D

CONCENTRATIONS OF CHLOROETHENES PMW-12D

CONCENTRATIONS OF CHLOROETHENES PMW-13D

CONCENTRATIONS OF CHLOROETHENES WELL PMW-17D

CONCENTRATIONS OF CHLOROETHENES WELL PMW-14D

CONCENTRATIONS OF CHLOROETHENES PMW-8D

CONCENTRATIONS OF CHLOROETHENES WELL PMW-2D

CONCENTRATIONS OF CHLOROETHENES WELL RMW-3D

CONCENTRATIONS OF CHLOROETHENES WELL PMW-16D

CONCENTRATIONS OF CHLOROETHENES PMW-15D

CONCENTRATIONS OF CHLOROETHENES INJ-01

CONCENTRATIONS OF CHLOROETHENES PMW-3D

CONCENTRATIONS OF CHLOROETHENES PMW-5D

CONCENTRATIONS OF CHLOROETHENES WELL MW-7D

CONCENTRATIONS OF CHLOROETHENES AFTER PILOT TEST VEGETABLE OIL INJECTION - PMW-6D

CONCENTRATIONS OF CHLOROETHENES WELL MW-11D

CONCENTRATIONS OF CHLOROETHENES PMW-4D

CONCENTRATIONS OF CHLOROETHENES RMW-4D

CONCENTRATIONS OF CHLOROETHENES PMW-7D

CONCENTRATIONS OF CHLOROETHENES WELL MW-21D

CONCENTRATIONS OF CHLOROETHENES WELL MW-20D

CONCENTRATIONS OF CHLOROETHENES WELL MW-17D

INJ-11D INJ-7D INJ-8D INJ-13D INJ-6D RMW-2D PMW-1D PMW-9D PMW-10D PMW-11D INJ-9D INJ-10D INJ-12D CB MH PMW-12D PMW-13D PMW-14D PMW-15D PMW-17D INJ-03 INJ-02 PMW-8D PMW-2D INJ-01 INJ-04 INJ-05 PMW-3D PMW-16D PMW-5D RMW-3D RMW-4D PMW-4D PMW-6D PMW-7D MW-7D MW-11D

SAN STM FW G

NOTES: UTILTY LOCATIONS ARE APPROXIMATE OTHER UTILITIES MAY EXIST FINAL LOCATIONS WILL BE DEPENDENT UPON SITE CONDITIONS AND PLANT OPERATIONS
NS = NOT SAMPLED

ATLANTIC RICHFIELD COMPANY

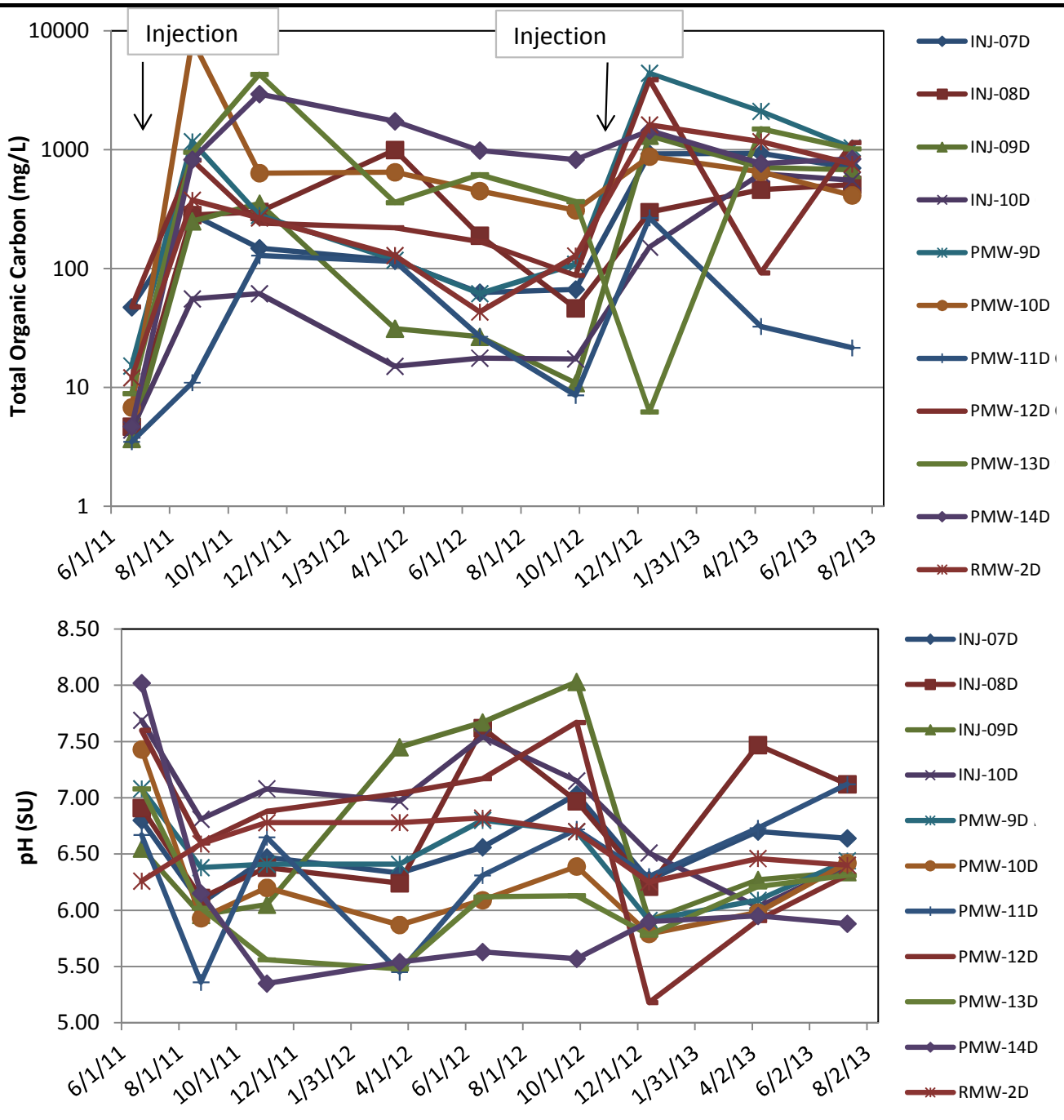
EKONOL POLYESTER
6600 WALMORE ROAD
NIAGARA FALLS, NY

FIGURE 4

BEDROCK WELL TIME SERIES PLOTS

PARSONS
40 LA RIVIERE DR, SUITE 350, BUFFALO, NY 14202 PHONE: 716-541-0730

447355.02000
P:\Ekonol\447355 P&Q Monitoring\Reporting\Quarterly Reports\4Q12 Final\Figure 4 Ekonol Dec 2012 rem area-Deep Conc. Charts.pdf



EKONOL POLYESTER, NY

TIME-SERIES PLOTS

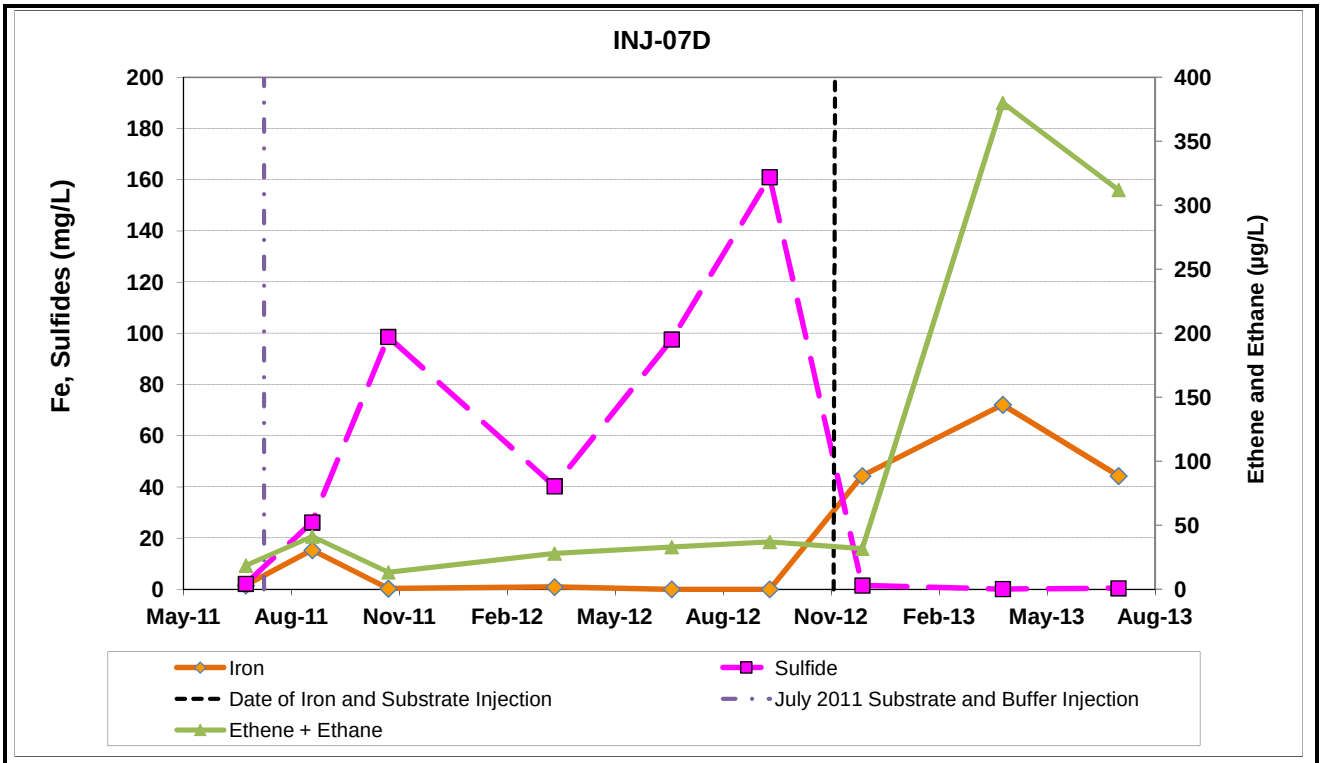
PH and TOC

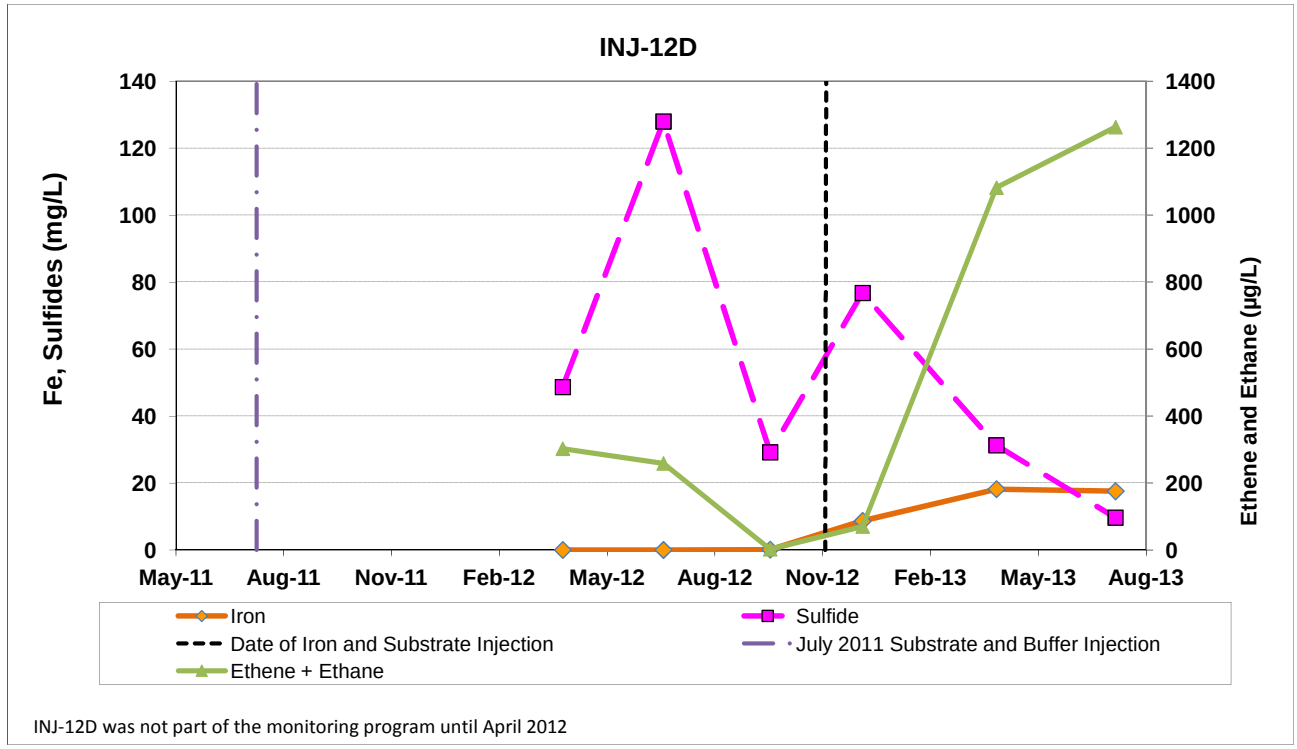
PARSONS

40 LA RIVEIRE DRIVE · SUITE 350 ·BUFFALO, NY 14202 · (716) 541-0730

July 2013

FIGURE 5





INJ-12D was not part of the monitoring program until April 2012

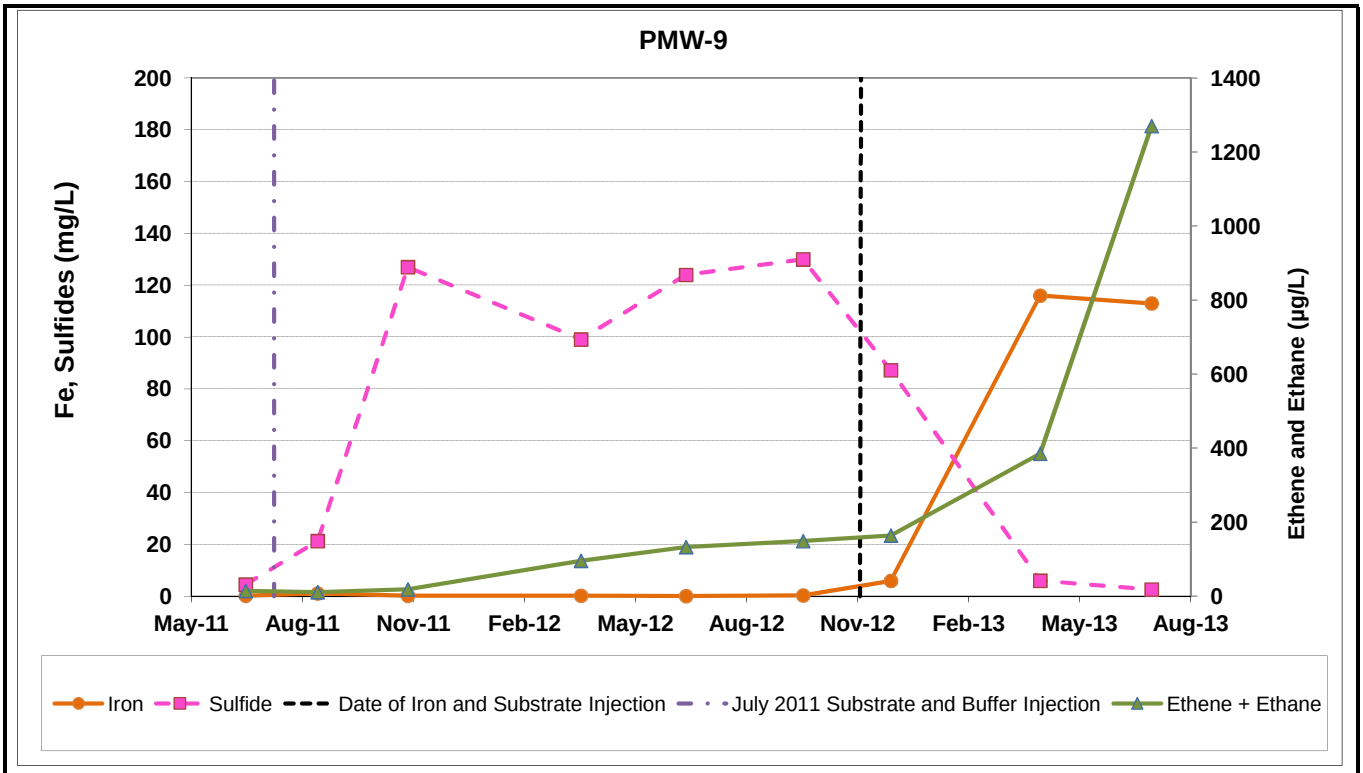
EKONOL POLYESTER RESINS, WHEATFIELD, NY

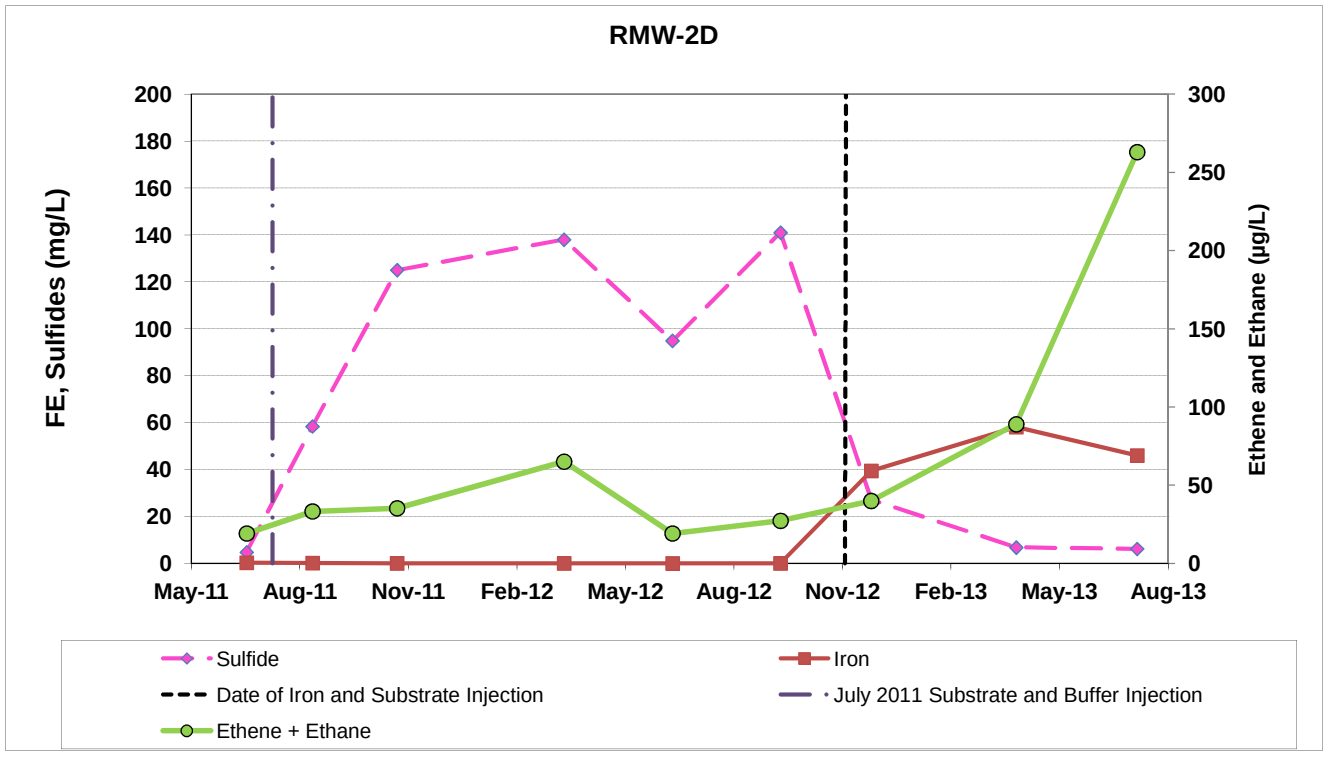
Time Series Plots

Iron, Sulfides, Ethene and Ethane

PARSONS
40 LA RIVIERE DRIVE · SUITE 350 ·BUFFALO, NY 14202 · (716) 541-0730

August 2013 | **FIGURE 6A**





EKONOL POLYESTER RESINS, WHEATFIELD, NY

Time Series Plots

Iron, Sulfides, Ethene and Ethane

PARSONS

40 LA RIVIERE DRIVE · SUITE 350 ·BUFFALO, NY 14202 · (716) 541-0730

August 2013 | **FIGURE 6B**

ATTACHMENT A

INSPECTION RECORDS

OPERATION, MONITORING AND MAINTENANCE CHECKLIST

Date: 7/19/13

Checklist Completed By: DAN CHAMBERLAND

Project Number: 447698.02000

Property Location: EKONOL

System Installation Date: _____

The purpose of this form is to document the operation and maintenance of the sub-slab depressurization system to provide assurance that the system is functioning as designed or identify and execute any actions required to achieve the mitigation of subsurface vapor intrusion of volatile organic compounds to indoor air

1. MITIGATION SYSTEM INSPECTION

Occupant Interview

Any concerns identified by the building occupants? YES (NO)

Comments / Action Items

NA

Occupant's Initials: DMW

External Piping

Vent pipes securely fastened to building	(YES)	NO	
Are there any visible openings or breaks in the pipe system	YES	(NO)	
Is the rain cap present and intact at discharge point	(YES)	NO	N/A
Inspection of the exhaust point verified that no air intakes have been located nearby	(YES)	NO	
The sealing/caulking around wall penetrations is intact	(YES)	NO	

Comments / Action Items

NA

Mitigation Fan

Fan is mounted securely to building (no excessive vibrations during operation)	(YES)	NO
Fan cover is installed	(YES)	NO
No visible damage to fan or cover	(YES)	NO

Comments / Action Items

NA

OPERATION, MONITORING AND MAINTENANCE CHECKLIST

Internal Piping

Vertical and horizontal pipe runs are secured, including at all penetration points	(YES)	NO	
The sealing/caulking is intact around the extraction point or points through the basement floor, crawlspace floor, and/or crawlspace/basement wall interface.	(YES)	NO	
Vibration dampener installed and intact (pertains to fan mount)	(YES)	NO	N/A
Mitigation system operation placard present and visible/legible	(YES)	NO	
Contains description of major components, valid contact number and instructions for occupant inquiries and/or system failure	(YES)	NO	
Mitigation system maintenance tag present and filled out	YES	(NO)	
Date of last inspection shown on tag: NA			
U-tube manometer present and intact at each extraction point	(YES)	NO	

Comments / Action Items

NA

Electrical

Electrical connections secured	(YES)	NO	
Junction boxes are closed	(YES)	NO	
Conduit is supported	(YES)	NO	
Circuit breakers controlling the mitigation fan and alarm circuits operate and are labeled "Mitigation System"	(YES)	NO	
Power switch tagged with intact tamper proof seal	(YES)	NO	
Audible alarm present	(YES)	NO	
Audible alarm switch in "on" position (light on alarm is green)	(YES)	NO	

Comments / Action Items

NA

Water Sumps (skip this section if no sump(s) present)

Sump present	YES	NO	
Number of sumps and locations are all shown on as-built drawing	YES	NO	
Sump pit is sealed to minimize influx of conditioned air	YES	NO	N/A
Penetrations to sump covers to accommodate electrical wiring, water injection pipes or vent pipes are sealed	YES	NO	N/A
Sump pits used as suction pits are identified with a label that reads; "This cover must be properly sealed for effective operation of the mitigation system - Contact Geosyntec Consultants (toll free 1-800-695-4436) for instructions on the correct procedure for replacement and sealing if removal or modification for any reason is performed"	YES	NO	N/A

Comments / Action Items

NA

OPERATION, MONITORING AND MAINTENANCE CHECKLIST

2. OPERATIONAL CHECKS

Fan is operating

Noise and Vibration within normal range	(YES) circled	NO	
Alarm sounds when fan is turned off	(YES) circled	NO	
U-Tube manometer indicating negative sub slab pressure	YES	NO	

U-Tube Manometer Reading: Location: OFFICE-ST COBAIN Vacuum 0.8 in H_20

U-Tube Manometer Reading: Location:__________ Vacuum ______ in H_20

U-Tube Manometer Reading: Location:__________ Vacuum ______ in H_20

U-Tube Manometer Reading: Location:__________ Vacuum ______ in H_20

U-Tube Manometer Reading: Location:__________ Vacuum ______ in H_20

U-Tube Manometer Reading: Location:__________ Vacuum ______ in H_20

U-Tube Manometer Reading: Location:__________ Vacuum ______ in H_20

U-Tube Manometer Reading: Location:__________ Vacuum ______ in H_20

U-Tube Manometer Reading: Location:__________ Vacuum ______ in H_20

Smoke test performed on internal penetrations and pipe joints

Smoke test indicated no leaks	(YES) circled	NO	N/A
Smoke test confirms air flow into sump	YES	NO	(N/A) circled
Back draft test confirms proper air flow at combustion appliances	(YES) circled	NO	N/A
Smoke test indicated no leaks	(YES) circled	NO	N/A

3. MAINTENANCE

Fan last replaced on (date): N/A

Fan due to be replaced; N/A

Additional Maintenance Action Items Performed

NA

4. ADDITIONAL ACTION ITEMS/ COMMENTS/COMPLETION DATES

NA

5. CERTIFICATION

I certify that the information on this form is true, accurate and complete (all blanks filled in) to the best of my knowledge and ability, and that I have the appropriate training and experience to perform this monitoring/inspection:

Name: DAN CHAMBERLAND Affiliation: PARSONS

Signature: [signature] Date (dd/mm/yy): 7/19/18 : 0940 am/(pm)

EKONOL SITE PAVEMENT INSPECTION FORM
WHEATFIELD, NEW YORK

Date of Inspection: 7/17/13 **Time: 0900**

Inspector(s) Name/Title: Robert Piurek/Geologist

Inspection of	Condition Present?		Action Required?		Comments/Location	Correction Date
	Yes	No	Yes	No		
1. Site Pavement						
A. Surface cracks	X		X		**Recommend surface pavement repair in front of Ekonol bay doors due to cracking/sinking of existing asphalt.**	**N/A**
B. Pits/divots	X		X		**Recommend surface pavement repair in front of Ekonol bay doors due to cracking/sinking of existing asphalt.**	**N/A**
C. Sinking	X		X		**Recommend surface pavement repair in front of Ekonol bay doors due to cracking/sinking of existing asphalt.**	**N/A**
2. Well curb boxes						
A. Cracks		X		X		
B. Loose		X		X		
C. Well caps missing		X		X		
D. Settlement		X		X		

Site Photo Log:

ATTACHMENT B

WATER LEVEL MEASUREMENT, SAMPLING MATRIX AND SAMPLING RECORDS

Ekonol Water Levels
7/8/2013

#	Well ID	DTW (ft btoc)	Time	Comments
1	INJ-01	6.71	1405	
2	INJ-02	6.52 to substrate	1402	
3	INJ-03	6.4	1403	
4	INJ-04	6.65 to substrate	1358	
5	INJ-05	5.98 to substrate	1408	
6	INJ-06D	6.60 to substrate	1303	
7	INJ-07D	6.83	1336	
8	INJ-08D	6.7	1507	
9	INJ-09D	6.62	1341	
10	INJ-10D	6.48	1249	
11	INJ-11D	6.39	1349	
12	INJ-12D	5.18 to substrate	1354	
13	INJ-13D	5.03	1350	
14	MW-1S	4.2	1304	
15	MW-2S	2.8	1258	
16	MW-3S	4.62	1242	
17	MW-4S	6.28	1359	
18	MW-5S	7.37	1311	
19	MW-6S	5.03	1457	One bolt missing
20	MW-7D	7.87	1410	
21	MW-7S	5.15	1411	
22	MW-8S	4.37	1324	
23	MW-9S	6.8	1415	bent/broken roadbox, bolts missing
24	MW-10D	5.21	1320	
25	MW-10S	6.31	1228	
26	MW-11D	9.53	1400	
27	MW-11S	7.34	1405	
28	MW-12D	7.07	1315	
29	MW-12S	6.4	1458	one bolt missing
30	MW-13D	11	1350	
31	MW-14D	8.82	1455	
32	MW-15D	7.7	1341	
33	MW-16D	12.41	1345	
34	MW-17D	8.56	1407	
35	MW-18D	8.04	1354	
36	MW-19D	7.25	1335	
37	MW-20D	6.88	1418	
38	MW-21D	7.35	1415	
39	OR-1SI	2.82	1350	
40	OR-2SI	3.2	1419	One bolt missing
41	OR-3SM	2.47	1337	

Ekonol Water Levels
7/8/2013

#	Well ID	DTW (ft btoc)	Time	Comments
42	OR-4SM	3.36	1340	
43	OR-5SM	2.75	1257	
44	OR-6SM	5.11	1301	
45	OR-7SI	2.78	1253	
46	OR-8SI	5.05	1251	One bolt missing
47	OR-9SM	6.38	1235	
48	OR-10SM	6.39	1238	
49	OR-11SI	6.61	1234	
50	OR-12SI	6.44	1232	bolt holes broke off
51	OR-13SM	6.56	1229	
52	OR-14SM	6.49	1231	
53	OR-15SM	5.75	1221	
54	OR-16SI	7.73	1223	cap under pressure
55	OR-17SI	5.72	1220	
56	OR-18SM	6.89	1226	
57	PMW-1D	5.54	1351	
58	PMW-1S	2.74	1255	
59	PMW-2D	6.36	1400	
60	PMW-2S	3.15	1300	
61	PMW-3D	6.56	1405	
62	PMW-3S	5.91	1304	
63	PMW-4D	6.82	1408	no bolts
64	PMW-4S	5.14	1305	
65	PMW-5D	6.73	1356	
66	PMW-5S	3.54	1337	
67	PMW-6D	8.43	1407	
68	PMW-6S	7.42	1340	
69	PMW-7D	6.79	1409	
70	PMW-7S	6.73	1237	
71	PMW-8D	6.65	1404	
72	PMW-8S	5.54	1240	
73	PMW-9D	6.5	1352	
74	PMW-9S	6.46	1230	
75	PMW-10S	4.89	1231	
76	PMW-10D	5.96	1307	
77	PMW-11D	6.43	1241	
78	PMW-11S	5.52	1222	
79	PMW-12D	6.65 to substrate	1354	
80	PMW-13D	6.79	1346	
81	PMW-14D	6.82	1305	
82	PMW-15D	6.67	1246	

Ekonol Water Levels
7/8/2013

#	Well ID	DTW (ft btoc)	Time	Comments
83	PMW-16D	6.37	1347	
84	PMW-17D	6.55	1306	
85	RMW-1D	6.55	1303	
86	RMW-2D	5.19 to substrate	1338	
87	RMW-3D	6.96	1244	
88	RMW-4D	7.62	1406	
89	TP-1	6.31	1258	
90	TP-2	6.43	1258	

TABLE 2
SUMMARY OF PROPOSED MONITORING
EKONOL POLYESTER RESINS, WHEATFIELD, NEW YORK

Location	Synoptic Water Level Measurement[g/]	VOCs[a/] (SW8260B)	Methane, Ethane, Ethene (Lab SOP)	Chloride, Nitrate, Sulfate[b/] (E300.1)	Dissolved Inorganics[b/c/] (SW6010B)	Ortho-phosphate[b/] (EPA 365.1)	Sulfide[b/] (MS 4500-S2-F)	Total Organic Carbon (SW9060)	Total Inorganic Carbon (SW9060)	Microbial Population[d/] (Lab SOP)	Acetylene and Hydrogen	Real time Analyses[e/]	Mobile Lab Analysis[f/]
Overburden Bioreactor Monitoring Wells													
OR-3SM	1	1	1	1	1	1	1	1	1			1	1
OR-4SM	1	1	1	1	1	1	1	1	1			1	1
OR-5SM	1	1	1	1	1	1	1	1	1	1	1	1	1
OR-6SM	1	1	1	1	1	1	1	1	1	1	1	1	1
OR-9SM	1	1	1	1	1	1	1	1	1			1	1
OR-10SM	1	1	1	1	1	1	1	1	1			1	1
OR-13SM	1	1	1	1	1	1	1	1	1	1	1	1	1
OR-14SM	1	1	1	1	1	1	1	1	1	1	1	1	1
OR-15SM	1	1	1	1	1	1	1	1	1			1	1
OR-18SM	1	1	1	1	1	1	1	1	1			1	1
PMW-1S	1	1	1	1	1	1	1	1	1	1	1	1	1
PMW-2S	1	1	1	1	1	1	1	1	1	1	1	1	1
PMW-3S	1	1	1	1	1	1	1	1	1	1	1	1	1
PMW-4S	1	1	1	1	1	1	1	1	1			1	1
PMW-5S	1	1	1	1	1	1	1	1	1			1	1
PMW-6S	1	1	1	1	1	1	1	1	1			1	1
PMW-7S	1	1	1	1	1	1	1	1	1			1	1
PMW-8S	1	1	1	1	1	1	1	1	1			1	1
PMW-9S	1	1	1	1	1	1	1	1	1	1	1	1	1
PMW-10S	1	1	1	1	1	1	1	1	1	1	1	1	1
PMW-11S	1	1	1	1	1	1	1	1	1			1	1
Bedrock Injection/Withdrawal Wells													
INJ-7D	1	1	1	1	1	1	1	1	1	1	1	1	1
INJ-8D	1	1	1	1	1	1	1	1	1			1	1
INJ-9D	1	1	1	1	1	1	1	1	1	1	1	1	1
INJ-10D	1	1	1	1	1	1	1	1	1	1	1	1	1
INJ-11D	1	1	1	1	1	1	1	1	1			1	1
INJ-12D	1	1	1	1	1	1	1	1	1			1	1
INJ-13D	1	1	1	1	1	1	1	1	1			1	1
Bedrock Monitoring Wells													
PMW-9D	1	1	1	1	1	1	1	1	1			1	1
PMW-10D	1	1	1	1	1	1	1	1	1			1	1
PMW-11D	1	1	1	1	1	1	1	1	1	1	1	1	1
PMW-12D	1	1	1	1	1	1	1	1	1			1	1
PMW-13D	1	1	1	1	1	1	1	1	1			1	1
PMW-14D	1	1	1	1	1	1	1	1	1			1	1
PMW-15D	1	1	1	1	1	1	1	1	1	1	1	1	1
PMW-16D	1	1	1	1	1	1	1	1	1			1	1
PMW-17D	1	1	1	1	1	1	1	1	1	1	1	1	1
Pilot Test Wells													
PMW-1D	1	1	1	1	1	1	1	1	1			1	1
INJ-01	1	1	1	1	1	1	1	1	1			1	1
PMW-2D	1	1	1	1	1	1	1	1	1	1		1	1
PMW-3D	1	1	1	1	1	1	1	1	1			1	1
PMW-4D	1	1	1	1	1	1	1	1	1			1	1
PMW-6D	1	1	1	1	1	1	1	1	1	1		1	1
RMW-4D	1	1	1	1	1	1	1	1	1			1	1
PMW-7D	1	1	1	1	1	1	1	1	1			1	1
MW-7D	1	1	1	1	1	1	1	1	1			1	1
Site Investigation Wells													
MW-1S	1	1	1	1	1	1	1	1	1			1	1
MW-2S	1	1	1	1	1	1	1	1	1	1		1	1
MW-3S	1	1	1	1	1	1	1	1	1			1	1
MW-4S	1	1	1	1	1	1	1	1	1			1	1
MW-6S	1	1	1									1	1
MW-10S	1	1	1									1	1
MW-11S	1	1	1									1	1
MW-12S	1	1	1									1	1
RMW-2D	1	1	1	1	1	1	1	1	1	1		1	1
RMW-3D	1	1	1	1	1	1	1	1	1			1	1
MW-11D	1	1	1									1	1
MW-17D	1	1	1									1	1
MW-20D	1	1	1									1	1
MW-21D	1	1	1									1	1
Monitoring Subtotal	60	60	60	52	52	52	52	52	52	19	15	60	60
Added for Annual													
RMW-1D	1	1	1	1	1	1	1	1				1	
PMW-5D	1	1	1	1	1	1	1	1				1	
PMW-8D	1	1	1	1	1	1	1	1				1	
MW-14D	1	1	1	1	1	1	1	1				1	
MW-15D	1	1	1	1	1	1	1	1				1	
MW-16D	1	1	1	1	1	1	1	1				1	
MW-18D	1	1	1	1	1	1	1	1				1	
MW-19D	1	1	1	1	1	1	1	1				1	
MW-10D	1	1	1	1	1	1	1	1				1	
MW-12D	1	1	1	1	1	1	1	1				1	
MW-13D	1	1	1	1	1	1	1	1				1	
MW-5S	1	1	1	1	1	1	1	1				1	
MW-9S	1	1	1	1	1	1	1	1				1	
MW-7S	1	1	1	1	1	1	1	1				1	
MW-8S	1	1	1	1	1	1	1	1				1	
INJ-02	1	1	1	1	1	1	1	1				1	
INJ-04	1	1	1	1	1	1	1	1				1	
INJ-05	1	1	1	1	1	1	1	1				1	
ANNUAL SUBTOTAL	18	18	18	18	18	18	18	18	0	0	0	18	0
QA/QC													
Duplicates	4	4	4	4			4						
Matrix Spike	4												
Matrix Spike Duplicate	4												
Trip Blanks	15												
TASK TOTAL PER SAMPLING	105	82	74	74	70	70	74	52	19	15	78	60	

[a/] VOCs = volatile organic compounds, including aromatic and chlorinated aliphatic hydrocarbons. If present, an oil sample will also be collected and analyzed for VOCs.

[b/] All metal and cation samples must be field-filtered and immediately preserved (Al, As, Ca, Fe, K, Mg, Mn, Se, Na)

[c/] Dissolved inorganic compounds will consist of aluminum (Al), arsenic (As), calcium (Ca), iron (Fe), potassium (K), magnesium (Mg), manganese(Mn), selenium (Se), and sodium (Na). Samples will be field filtered.

[d/] Analysis of microbial population composition will include concentration measurements of dehalococcoides (DHC) and dehalobacter (DHB) species in cells per milliliter as well as DHC functional genes

[e/] Well head analyses include dissolved oxygen, oxidation-reduction potential, pH, temperature, electrical conductivity, and visual appearance.

[f/] Mobile lab analyses include carbon dioxide, alkalinity, sulfide, ferrous iron, and manganese.

[g/] For the baseline monitoring round, all Site Water Levels will be recorded

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: SR-35M_070913 Well Diameter: 2 Inches

Samplers: C. Hulsey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
2.75	Casing Volumes (gal./ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: Low Flow Date/Time: 7/9/13 0817

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
0822	3.86	180	0.47	6.61	1.99	7.19	6.857	18.50	4.459	76.1	CLEAR
0827	3.88	180	0.94	6.65	1.03	7.81	6.879	17.93	4.437	58.6	
0832	3.88	180	1.41	6.65	0.98	7.97	6.901	17.74	4.484	53.9	
0837	3.89	180	1.88	6.65	0.95	8.04	6.995	17.72	4.584	44.0	
0842	3.89	180	2.35	6.66	0.99	7.65	7.027	17.74	4.586	40.0	CLEAR
0902	3.90	180	2.82	6.65	1.04	8.00	7.060	17.61	4.589	35.0	"
0907	3.92	180	3.29	6.66	1.01	8.15	7.079	17.51	4.601	27.4	"
0912	3.93	180	3.4	6.66	0.97	9.37	7.110	17.44	4.622	24.5	"
0917	3.94	180	3.7	6.65	0.89	13.9	7.149	17.47	4.651	18.5	"
0922	3.94	180	3.09	6.65	0.85	16.0	7.174	17.49	4.663	14.7	"
0927	3.94	180	3.33	6.65	0.81	8.13	7.190	17.56	4.673	11.8	"
0932	3.94	180	3.57	6.68	0.80	8.05	7.041	17.47	4.576	8.1	"
0937	3.95	180	3.81	6.67	0.84	8.05	7.104	17.42	4.644	8.2	"

Sampling Data

Method: Low Flow Date/Time: 7/9/13 0940 Total Volume of Water purged: 4.5

Field Parameters

HORRIBA	
pH	6.67
Spec. Cond.(mS/cm)	7.104
Turbidity (NTU)	8.05
DO (mg/L)	0.84
Temp.(°C)	17.42
ORP (mv)	8.2
TDS (g/L)	4.644

HACH TEST KITS	
Alkalinity (g/g)	44 DROPS X20 880
Carbon Dioxide (mg/L)	373 X 2 746
Ferrous Iron (mg/L)	1.6
Manganese (mg/L)	0.3
Hydrogen Sulfide (mg/L)	0.1

NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved norganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments: VOAs EFFERVESCING

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: OR-45M-070913 Well Diameter: 2 inches

Samplers: Bill Simons (WPS) Monitored Natural Attenuation Sample Set (Y/N)?

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
3.40	Casing Volumes (gal/ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: _____ Date/Time: 7/9/13 0819

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
~~0818~~	~~3.46~~										
0830	3.49	200	0.48	6.61	0.15	12.9	3.74	18.63	2.38	-109	clear
0840	3.54	200	0.96	6.66	0.07	8.54	3.69	18.22	2.36	-112	"
0850	3.57	200	1.44	6.70	0.04	11.91	3.69	18.12	2.36	-113	"
0900	3.58	200	1.92	6.74	0.01	~~13.32~~ 7.19	3.68	18.00	2.35	-115	
0910	3.61	200	2.64	6.76	0.00	8.42	3.68	17.90	2.35	-115	
0925	3.63	200	3.12	6.77	0.00	7.46	3.68	17.93	2.36	-115	
0930	3.63	200	3.36	6.78	0.00	7.69	3.69	17.96	2.36	-116	
0935	3.64	200	3.60	6.77	0.00	7.66	3.69	17.91	2.36	-115	

Sampling Data

Method: low flow Date/Time: 7/9/2013 0940 Tota Volume of Water purged: 3 6

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.77	Alkalinity (g/g)	43 drops x 25 1660
Spec. Cond.(mS/cm)	3.69	Carbon Dioxide (mg/L)	1414 x 2 2828
Turbidity (NTU)	7.66	Ferrous Iron (mg/L)	2 0
DO (mg/L)	0.00	Manganese (mg/L)	0.9
Temp.(°C)	17.91	Hydrogen Sulfide (mg/L)	0.1
ORP (mv)	-115		
TDS (g/L)	2.36		

1 NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
F Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
F Dissolved norganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
F Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
F Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen Acetylene				

Comments: VOAs effervescing

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: MW-19D Well Diameter: _____ inches

Samplers: DPC Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: _____ Tota Volume of Water purged: _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.32	Alkalinity (g/g)	30
Spec. Cond.(mS/cm)	9.17	Carbon Dioxide (mg/L)	390
Turbidity (NTU)	1.54	Ferrous Iron (mg/L)	2.0
DO (mg/L)	0.0	Manganese (mg/L)	0.0
Temp.(°C)	16.27	Hydrogen Sulfide (mg/L)	0.0
ORP (mv)	22		
TDS (g/L)	7.23		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved norganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen Acetylene				

Comments: collected sample @ 1020 MW-19D-070913

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-6S_070923 Well Diameter: 2 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
6.34	Casing Volumes (gal./ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: Low flow Date/Time: 7/9/13 11:00

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
11 10	7.20	100	0.24	6.86	0.32	13.66	3.40	18.88	2.17	-74	Clear
11 20	7.60	100	0.48	6.78	0.20	5.75	3.21	18.89	2.05	-76	"
11 30	7.75	100	0.72	6.80	0.20	5.12	3.19	18.61	2.04	-83	
11 35	7.82	100	0.94	6.79	0.20	5.88	3.19	18.60	2.04	-84	
11 40	7.88	100	1.18	6.79	0.19	4.92	3.17	18.58	2.03	-84	
11 45	7.88	100	1.32	6.80	0.21	5.68	3.18	18.67	2.03	-85	

Sampling Data

Method: Low flow Date/Time: 7/9/13 11:50 Total Volume of Water purged: 1.4

Field Parameters

HORRIBA	
pH	6.80
Spec. Cond.(mS/cm)	3.18
Turbidity (NTU)	5.68
DO (mg/L)	0.21
Temp.(°C)	18.67
ORP (mv)	-85
TDS (g/L)	2.03

HACH TEST KITS	
Alkalinity (g/g)	150 drops x 20 = 3000
Carbon Dioxide (mg/L)	60 x 2 = 120
Ferrous Iron (mg/L)	10
Manganese (mg/L)	0.3
Hydrogen Sulfide (mg/L)	0.1

* NOTE * HACH test kits are only required for MNA analysis wells.

	SAMPLE SET				
	Parameter	Bottle		Pres.	Method
	Select VOCs	3-40mL glass vial		HCl	EPA 8260
	MEE	2-40mL glass vial		HCl	Lab SOP
F	Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
F	Dissolved nonganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
F	Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
F	Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
	Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
	Total Inorganic Carbon	1-120mL glass amber		None	SW9060
	Microbial Census				
	Hydrogen/ Acetylene				

Comments: VOA effervescing

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-150 Well Diameter: 2 Inches

Samplers: DPC Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal./ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: _____ Total Volume of Water purged: _____

Field Parameters

HORRIBA	
pH	7.53
Spec. Cond.(mS/cm)	1.34
Turbidity (NTU)	0.17
DO (mg/L)	0.0
Temp.(°C)	15.62
ORP (mv)	-86
TDS (g/L)	0.857

HACH TEST KITS	
Alkalinity (g/g)	8 Drops (120) 150
Carbon Dioxide (mg/L)	88
Ferrous Iron (mg/L)	0.2
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	0.5

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved norganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen Acetylene				

Comments: Collect sample MW-150-070913 @ 1430

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-10D Well Diameter: 4 inches

Samplers: DORUK UCAK / Bill Simon Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
6.60	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low flow Date/Time: 7/9/13 13:50

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: Low flow Date/Time: 7/9/13 15:35 Total Volume of Water purged: 4.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.42	Alkalinity (g/g)	NA
Spec. Cond.(mS/cm)	1.84	Carbon Dioxide (mg/L)	NA
Turbidity (NTU)	706 AV	Ferrous Iron (mg/L)	NA
DO (mg/L)	0.0	Manganese (mg/L)	NA
Temp.(°C)	17.75	Hydrogen Sulfide (mg/L)	0.5
ORP (mv)	-426		
TDS (g/L)	1.18		

* NOTE * HACH test kits are only required for MNA analysis wells.

Water black stained. Only can analiz H2S

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved norganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments: VOAs effervescing

PARSONS

LOW FLOW WELL SAMPLING RECORD

1 of 2

Site Name: Ekonol Facility Well ID: PMW-9D_070913 Well Diameter: 4 Inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
6.23	Casing Volumes (gal./ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low Flow Date/Time: 7/9/13 1302

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1312	7.48	700	0.26	6.41	1.06	12.11	4.371	17.27	2.841	12.0	CLEAR
1322	7.81	100	0.52	6.41	0.93	8.33	4.386	17.54	2.851	-2.7	
1332	8.11	100	0.78	6.41	0.89	7.39	4.386	17.62	2.850	-12.5	
1342	8.31	100	1.04	6.41	0.79	8.24	4.374	17.51	2.843	-14.3	
1352	8.51	100	1.3	6.41	0.76	9.55	4.328	17.41	2.814	-19.6	
1402	8.65	100	1.56	6.40	0.66	11.12	4.279	17.46	2.782	-21.2	CLEAR W/ BLACK PARTICLES
1412	8.73	100	1.82	6.41	0.62	11.62	4.209	17.47	2.735	-25.4	SAME
1417	8.75	100	1.95	6.40	0.65	11.66	4.180	17.33	2.717	-24.2	SAME
1422	8.82	100	2.08	6.41	0.62	11.81	4.165	17.46	2.707	-25.9	SAME
1427	8.83	100	2.21	6.41	0.55	11.96	4.124	17.59	2.680	-27.3	SAME
1432	8.84	100	2.34	6.41	0.50	12.02	4.110	17.58	2.671	-27.9	SAME
1437	8.85	100	2.47	6.41	0.46	12.10	4.053	17.71	2.635	-30.3	SAME
1442	8.85	100	2.6	6.41	0.45	12.15	4.038	17.98	2.624	-31.4	SAME

Sampling Data

Method: Low Flow Date/Time: 7/9/13 1535 Total Volume of Water purged: 5.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.44	Alkalinity (g/g)	**
Spec. Cond.(mS/cm)	3.797	Carbon Dioxide (mg/L)	
Turbidity (NTU)	12.0	Ferrous Iron (mg/L)	
DO (mg/L)	0.07	Manganese (mg/L)	
Temp.(°C)	17.01	Hydrogen Sulfide (mg/L)	>5.0
ORP (mv)	-47.1		
TDS (g/L)	2.466		

NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved norganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen Acetylene				

Comments: ** WATER TURNING BLACK AFTER ~ 30 SEC, COULD NOT RUN HACH TESTS.

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-9D_070913 Well Diameter: 4 inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: _____ Date/Time: 7/9/13

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1447	8.86	100	2.73	6.42	0.43	12.2	3.999	18.03	2.598	-30.7	BLACK PARTICLES
1452	8.86	100	2.86	6.42	0.36	-44 *	3.994	18.26	2.597	-33.2	
1457	8.87	100	2.99	6.41	0.31	-44 *	3.990	17.75	2.594	-32.7	
1502	8.87	150	3.19	6.41	0.28	11.82	3.954	17.68	2.568	-33.9	
1507	8.88	150	3.39	6.41	0.22	11.89	3.930	17.66	2.555	-36.0	
1512	8.89	150	3.59	6.42	0.21	11.92	3.904	17.57	2.538	-38.6	
1517	8.90	150	3.79	6.42	0.17	11.81	3.889	17.44	2.516	-40.7	
1522	8.91	150	3.99	6.43	0.13	11.90	3.853	17.16	2.504	-42.7	
1527	8.92	150	4.19	6.44	0.09	11.95	3.809	17.01	2.476	-45.5	
1532	8.94	150	4.39	6.44	0.07	12.00	3.799	17.01	2.466	-47.1	

Sampling Data

Method: Low Flow Date/Time: 7/9/13 1535 Total Volume of Water purged: 5.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.44	Alkalinity (g/g)	**
Spec. Cond.(mS/cm)	3.799	Carbon Dioxide (mg/L)	↓
Turbidity (NTU)	12.0	Ferrous Iron (mg/L)	↓
DO (mg/L)	0.07	Manganese (mg/L)	↓
Temp.(°C)	17.01	Hydrogen Sulfide (mg/L)	>5.0
ORP (mv)	-47.1		
TDS (g/L)	2.466		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved norganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: ** WATER TURNING BLACK AFTER ~30 SEC. COULD NOT RUN HACH TESTS

* TURBIDITY METER GIVING ERRONEOUS READINGS.

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-5S_070913 Well Diameter: 2 inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
3.69	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/9/13 1112

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1122	5.19	100	0.26	6.89	1.53	11.2	4.068	19.46	2.650	81.5	CLEAR
1132	5.91	100	052	7.00	1.49	11.79	2.808	19.45	1.829	65.0	CLEAR
1142	6.61	100	0.78	6.98	1.60	5.19	2.531	19.37	1.645	61.2	CLEAR
1152	7.11	100	0.104	6.96	1.63	3.04	2.662	19.31	1.728	59.4	CLEAR
1157	10.46	500	1.7	6.89	1.92	64.6	3.453	17.49	2.254	64.3	~~CLEAR~~ SLIGHTLY CLOUDY
1200	PUMPING DRY		1.8								

Sampling Data

Method: LOW FLOW Date/Time: 7/9/13 1630 Total Volume of Water purged: 2.0

Field Parameters

HORRIBA			HACH TEST KITS	
pH	6.89		Alkalinity (g/g)	19 DROPS X 20 380
Spec. Cond.(mS/cm)	3.453	Pumped Dry	Carbon Dioxide (mg/L)	248
Turbidity (NTU)	64.6		Ferrous Iron (mg/L)	0.2
DO (mg/L)	1.92		Manganese (mg/L)	0.3
Temp.(°C)	17.49		Hydrogen Sulfide (mg/L)	0.0
ORP (mv)	64.3			
TDS (g/L)	2.254			

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved norganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments: @1153 - FLOW TO 500 ml/min TO PUMP WELL DRY. WATER LEVEL KEPT DROPPING.
@1626 DTW @ 3.94 - SAMPLED

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-11D Well Diameter: 4 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
6.27	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: Low flow Date/Time: 7/10/13 1455 Total Volume of Water purged: 2.64

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.12	Alkalinity (g/g)	20 drops x 20 400
Spec. Cond.(mS/cm)	1.52	Carbon Dioxide (mg/L)	120 x 2 240
Turbidity (NTU)	4.77	Ferrous Iron (mg/L)	1.6
DO (mg/L)	0.00	Manganese (mg/L)	0.0
Temp.(°C)	20.77	Hydrogen Sulfide (mg/L)	75
ORP (mv)	-340		
TDS (g/L)	1.23		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

DHC, DHC functional genes, DHBt

Comments: _____

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-1S Well Diameter: 2 Inches

Samplers: C. Hugi Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
2.68	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: 7/10/13 1430

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1440	3.10	150	0.39	7.21	0.59	9.15	4.231	19.42	2.753	-115.8	CLEAR
1450	3.10	150	0.78	7.25	0.62	0.96	4.104	19.37	2.662	-131.8	
1500	3.14	150	1.17	7.28	0.68	2.04	3.989	18.75	2.575	-134.4	
1505	3.15	150	1.37	7.31	0.61	1.31	3.977	18.52	2.585	-135.5	
1510	3.15	150	1.56	7.32	0.60	3.38	3.967	18.52	2.578	-137.4	
1515	3.15	150	1.76	7.35	0.60	3.44	3.942	18.43	2.563	-138.7	
1520	3.14	150	1.95	7.36	0.59	3.45	3.922	18.68	2.549	-136.9	
1525	3.14	150	2.15	7.38	0.57	4.81	3.911	18.71	2.541	-139.3	
1530	3.11	150	2.44	7.40	0.57	4.68	3.901	18.94	2.536	-143.9	
1535	3.12	150	2.64	7.41	0.56	4.89	3.896	18.99	2.531	-145.1	

Sampling Data

Method: Low Flow Date/Time: 7/10/13 1540 Total Volume of Water purged: 50

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.41	Alkalinity (g/g)	15 Drops x 20 200
Spec. Cond.(mS/cm)	3.896	Carbon Dioxide (mg/L)	120
Turbidity (NTU)	4.89	Ferrous Iron (mg/L)	0.2
DO (mg/L)	0.56	Manganese (mg/L)	0.0
Temp.(°C)	18.99	Hydrogen Sulfide (mg/L)	5.0
ORP (mv)	-145.1		
TDS (g/L)	2.531		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	1-FILTER	NONE	1000ml
Hydrogen, Acetylene	1-20ml VIAL 2-40ml VIALS	NONE	

Comments: DISSOLVED HYDROGEN- START@1612/STOP@1637

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-15D Well Diameter: 4 Inches

Samplers: DPC Monitored Natural Attenuation Sample Set (Y/N)? ______

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: ______ Date/Time: ______

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments

Sampling Data

Method: ______ Date/Time: ______ Total Volume of Water purged: ______

Field Parameters

HORRIBA	
pH	7.24
Spec. Cond.(mS/cm)	2.66
Turbidity (NTU)	869
DO (mg/L)	0.0
Temp.(°C)	20.02
ORP (mv)	-194
TDS (g/L)	1.70

HACH TEST KITS	
Alkalinity (g/g)	100
Carbon Dioxide (mg/L)	DARK
Ferrous Iron (mg/L)	FOR
Manganese (mg/L)	ANALYSIS
Hydrogen Sulfide (mg/L)	5 +

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	FILTER: 1: 320 mL 2: 190 mL		
Hydrogen, Acetylene			280 mL/MIN 15 min

Comments: PMW-15D_070613 @ 1345

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: INJ-7D Well Diameter: 4 inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
6.88	Casing Volumes (gal/ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: LOW FLOW Date/Time: 7/10/13 1115

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1125	7.37	150	0.4	7.36	0.48	80.7	2.771	17.27	1.802	37.7	CLOUDY
1135	7.49	150	0.8	7.25	0.38	84.7	2.752	17.68	1.787	25.0	
1145	7.58	125	1.13	6.74	0.31	34.1	3.640	17.58	2.358	20.6	
1150	7.67	125	~~1.29~~ 1.29	6.65	0.23	15.6	3.947	18.03	2.565	9.1	
1155	7.68	125	1.46	6.65	0.23	14.4	3.964	18.11	2.575	7.9	CLEAR
1200	7.69	125	1.62	6.65	0.22	13.7	3.972	18.06	2.583	6.8	
1205	7.70	125	1.79	6.65	0.21	13.6	3.982	18.24	2.587	3.6	
1210	7.70	125	1.95	6.65	0.20	12.19	3.995	18.10	2.599	0.2	
1215	7.71	125	2.12	6.65	0.20	11.52	4.019	18.21	2.612	-2.9	
1220	7.71	125	2.28	6.64	0.20	12.31	4.029	18.18	2.621	-5.3	
1225	7.71	125	2.45	6.65	0.19	11.6	4.039	18.34	2.623	-7.0	
1230	7.71	125	2.61	6.64	0.22	12.9	4.045	18.62	2.636	-9.0	
1235	7.72	~~125~~ 150	~~2.78~~ 2.81	6.64	0.19	13.4	4.058	18.66	2.637	-12.7	
1240	7.72	150 CNT	2.94 3.01	6.64	0.20	12.8	4.035	18.28	2.622	-16.4	

Sampling Data

Method: LOW FLOW Date/Time: 7/10/13 1255 Total Volume of Water purged: 5.0 gal

Field Parameters

HORRIBA	
pH	6.64
Spec. Cond.(mS/cm)	3.998
Turbidity (NTU)	12.12
DO (mg/L)	0.18
Temp.(°C)	18.40
ORP (mv)	-20.1
TDS (g/L)	2.599

HACH TEST KITS	
Alkalinity (g/g)	21 DROPS x20 420
Carbon Dioxide (mg/L)	428
Ferrous Iron (mg/L)	1.8
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	0.1

NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs (MS/MSD)	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved norganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	3-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census	2-FILTERS			400 ml 520 ml
Hydrogen Acetylene	1-20ml VIAL 2-40ml VIALS			

Comments: COLLECTED MS/MSD INJ-7D_071013 MS / INJ-7D_071013 MSD (VOCS ONLY - 6)
DISSOLVED HYDROGEN - START @ 1327 / STOP @ 1352

PARSONS

1245	7.72	~~125~~ CNT	~~3.27~~ 3.21	6.65	0.15	12.5	4.000	18.38	2.598	-18.9
1250	7.72	150	3.41	6.64	0.18	12.12	3.998	18.40	2.599	-20.1

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-17D_071013 Well Diameter: 4 Inches

Samplers: DPC Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: 1030 Total Volume of Water purged: _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.66	Alkalinity (g/g)	660
Spec. Cond.(mS/cm)	2.53	Carbon Dioxide (mg/L)	480
Turbidity (NTU)	1.47	Ferrous Iron (mg/L)	0.0
DO (mg/L)	0.0	Manganese (mg/L)	0.0
Temp.(°C)	18.93	Hydrogen Sulfide (mg/L)	5.0
ORP (mv)	-341	* NOTE * HACH test kits are only required for MNA analysis wells.	
TDS (g/L)	1.62		

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	1 VIAL, 1000mL		
Hydrogen, Acetylene	2 VOAs 1 VIAL		

Comments: Collect sample PMW-17D-071013

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: OR-4SM Well Diameter: 2 inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
5.5	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low Flow Date/Time: 7/10/13 0855

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
0905											

Sampling Data

Method: Low flow Date/Time: 1100 Total Volume of Water purged: 6.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.78	Alkalinity (g/g)	
Spec. Cond.(mS/cm)	5.77	Carbon Dioxide (mg/L)	
Turbidity (NTU)	2.27	Ferrous Iron (mg/L)	
DO (mg/L)	0.00	Manganese (mg/L)	
Temp.(°C)	21.37	Hydrogen Sulfide (mg/L)	
ORP (mv)	-445		
TDS (g/L)	3.63		

NOTE : HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census	1 FILTER = 1000mL			
Hydrogen, Acetylene				

Comments: VOAs afterrescued

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: OR-5sm_071013 Well Diameter: 2 inches

Samplers: C. Hugy Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
2.82	Casing Volumes (gal./ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low Flow Date/Time: 7/10/13 0845

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
0855	2.80	230	0.6	6.51	1.35	9.12	6.481	18.64	4.212	37.4	CLEAR
0905	2.80	230	1.2	6.52	1.09	9.17	6.531	18.45	4.244	19.8	
0915	2.79	230	1.8	6.52	0.91	10.08	6.543	18.43	4.253	9.2	
0920	2.79	230	2.1	6.54	0.90	10.02	6.549	18.41	4.257	3.8	
0925	2.80	230	2.4	6.51	0.32	9.78	6.541	18.37	4.253	-3.1	
0930	2.80	230	2.7	6.50	0.26	9.87	6.549	18.33	4.255	-3.9	
0935	2.80	230	3.0	6.50	0.22	9.80	6.552	18.42	4.258	-4.2	

Sampling Data

Field Parameters

Method: Low Flow Date/Time: 7/10/13 0940 Total Volume of Water purged: 5.5

HORRIBA	
pH	6.50
Spec. Cond.(mS/cm)	6.552
Turbidity (NTU)	9.80
DO (mg/L)	0.22
Temp.(°C)	18.42
ORP (mv)	-4.2
TDS (g/L)	4.258

HACH TEST KITS	
Alkalinity (g/g)	34 DROPS X 20 680
Carbon Dioxide (mg/L)	92
Ferrous Iron (mg/L)	1.8
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	1.5

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
	Parameter	Bottle	Pres.	Method
D	Select VOCs	3-40mL glass vial	HCl	EPA 8260
D	MEE	2-40mL glass vial	HCl	Lab SOP
D	Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
D	Dissolved organics	1-250mL plastic (Field filtered)	HNO3	SW6010B
	Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
	Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
D	Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
	Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
	Microbial Census	1-FILTER	NONE	1000 mL
	Hydrogen/ Acetylene	1-20ml VIAL 2-40ml VIALS	NONE	

Comments: COLLECTED DUPLICATE OR-105sm_071013 @ 1201 (PARAMETERS MARKED W/"D" ABOVE)
DISSOLVED HYDROGEN - START @ 1006 / STOP @ 1021

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-2S_07113 Well Diameter: 2 Inches

Samplers: C. Hugg Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
3.06	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/11/13 1446

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1456	5.12	110	0.29	6.79	1.60	8.36	5411	20.82	3.517	72.3	CLEAR
1506	6.49	100	0.55	6.79	1.41	7.94	5407	21.12	3.514	69.4	
1516	7.22	100	0.81	6.81	1.03	2.11	5319	20.77	3.457	47.3	
1526	7.61	90	1.04	6.81	0.96	1.62	5290	20.75	3.438	40.6	
1536	7.61	90	1.27	6.84	0.91	3.48	5323	19.98	3.459	34.3	
1546	7.63	100 90	1.36 1.5	6.83	0.96	2.64	5277	20.01	3.430	32.6	
1556	7.65	100 90	1.85 1.73	6.82	0.99	2.79	5.296	19.30	3.442	29.5	
1601	7.66	100	2.00	6.82	0.89	3.59	5298	19.76	3.444	28.2	CLEAR
1606	7.66	100	2.14	6.81	0.86	2.94	5,365	19.80	3,448	27.0	
1611	7.67	100	2.29	6.82	0.81	3.16	5316	20.04	3.456	26.6	
1616	7.68	100	2.43	6.82	0.82	5.06	5.324	19.63	3.460	25.6	CLEAR
1621	7.68	100	2.58	6.83	0.80	5.04	5309	19.68	3.452	25.0	
1626	7.69	100	2.72	6.84	0.79	5.08	5300	19.74	3.445	24.1	

Sampling Data

Method: LOW FLOW Date/Time: 7/11/13 1630 Total Volume of Water purged: 3.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.84	Alkalinity (g/g)	15x20 300
Spec. Cond.(mS/cm)	5.300	Carbon Dioxide (mg/L)	308
Turbidity (NTU)	5.08	Ferrous Iron (mg/L)	2.0
DO (mg/L)	0.79	Manganese (mg/L)	0.0
Temp.(°C)	19.74	Hydrogen Sulfide (mg/L)	0.0
ORP (mv)	24.1		
TDS (g/L)	3.445		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide *	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	1-FILTER		1000 ml
Hydrogen, Acetylene			

Comments: _____

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-17D Well Diameter: 2 Inches

Samplers: DAN CHAMBERLAND Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: low flow Date/Time: 7/11/13 16:00 Total Volume of Water purged: 2.7

Field Parameters

HORRIBA	
pH	7.04
Spec. Cond.(mS/cm)	2.85
Turbidity (NTU)	0.27
DO (mg/L)	0.0
Temp.(°C)	25.44
ORP (mv)	-244
TDS (g/L)	1.82

HACH TEST KITS	
Alkalinity (g/g)	260
Carbon Dioxide (mg/L)	176
Ferrous Iron (mg/L)	0
Manganese (mg/L)	~~4.0~~ (0.0)
Hydrogen Sulfide (mg/L)	4.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments: _____

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-11D Well Diameter: 2 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

reference to 2" casing →

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
9.92	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time:

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: low flow Date/Time: 7/11/13 1545 Total Volume of Water purged: 2.64

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.33	Alkalinity (g/g)	15 x 20 300
Spec. Cond.(mS/cm)	1.97	Carbon Dioxide (mg/L)	60 x 2 120
Turbidity (NTU)	6.33	Ferrous Iron (mg/L)	0.0
DO (mg/L)	0.83	Manganese (mg/L)	0.0
Temp.(°C)	18.14	Hydrogen Sulfide (mg/L)	3.0
ORP (mv)	-286		
TDS (g/L)	1		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
✓ Select VOCs	3-40mL glass vial	HCl	EPA 8260
✓ MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments:

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: INJ-09D Well Diameter: 4 inches

Samplers: DAN CHAMBERLAND Monitored Natural Attenuation Sample Set (Y/N)?

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Field Parameters

Method: ~~bladder~~ geopump Date/Time: 7/11/13 Total Volume of Water purged: 3.1

HORRIBA	
pH	6.34
Spec. Cond.(mS/cm)	3.33
Turbidity (NTU)	3.66
DO (mg/L)	0.0
Temp.(°C)	24.23
ORP (mv)	-32.3
TDS (g/L)	2.13

HACH TEST KITS	
Alkalinity (g/g)	
Carbon Dioxide (mg/L)	
Ferrous Iron (mg/L)	
Manganese (mg/L)	
Hydrogen Sulfide (mg/L)	~~0.~~ 0.6

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census	Filter-1 500mL -2 350mL			
Hydrogen, Acetylene	2 VOAs & 1 VIAL			

Comments: Collect sample INJ-09D - 7/11/13 @ 13:20

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-3S_071113 Well Diameter: 2 Inches

Samplers: C. HUEY Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: 7/11/13 1144

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1154	7.66	120	0.32	6.51	0.66	11.79	6.313	18.01	4.012	12.6	CLEAR
1204	8.20	100	0.58	6.51	0.59	11.42	6.227	17.46	4.048	0.3	
1214	8.06	110	0.87	6.58	0.36	9.12	6.270	18.10	4.075	-60.7	
1224	8.08	110	1.16	6.59	0.35	7.88	6.267	18.03	4.074	-64.7	
1234	8.13	110	1.45	6.58	0.33	6.39	6.220	17.73	4.042	-83.4	
1239	8.10	110	1.59 ~~1.65~~	6.58	0.35	5.08	6.193	17.97	4.026	-84.2	
1244	8.10	110	1.74 ~~1.84~~	6.57	0.37	5.12	6.217	17.85	4.042	-92.6	
1249	8.13	110	1.88 ~~2.04~~	6.57	0.36	5.19	6.237	17.64	4.055	-98.7	
1254	8.13	110	2.03 ~~2.23~~	6.58	0.33	5.36	6.233	17.55	4.051	-102.1	
1259	8.14	110	2.17 ~~2.43~~	6.58	0.37	5.66	6.239	17.78	4.056	-104.0	
1304	8.15	110	2.32 ~~2.62~~	6.57	0.37	7.13	6.246	17.81	4.059	-107.6	
1309	8.15	110	2.46	6.56	0.37	5.99	6.251	17.91	4.063	-111.6	
1314	8.15	110	2.61	6.56	0.36	5.89	6.266	17.84	4.073	-113.9	

Sampling Data

Method: LOW FLOW Date/Time: 7/11/13 1315 Total Volume of Water purged: 4.75

Field Parameters

HORRIBA	
pH	6.56
Spec. Cond.(mS/cm)	6.266
Turbidity (NTU)	5.89
DO (mg/L)	0.36
Temp.(°C)	17.84
ORP (mv)	-113.9
TDS (g/L)	4.073

HACH TEST KITS	
Alkalinity (g/g)	32x20 640
Carbon Dioxide (mg/L)	662
Ferrous Iron (mg/L)	0.3
Manganese (mg/L)	0.03
Hydrogen Sulfide (mg/L)	3.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	1-FILTER		1000ml
Hydrogen, Acetylene	1-20ml VIAL 2-40ml VIALS	NONE TRISODIUM PHOSPHATE	

Comments: COLLECTED MS/MSD PMW-3S_071113 MS / PMW-3S_071113 MSD (VOCS ONLY - 6 VOAS)
DISSOLVED HYDROGEN - START @ 1348 / STOP @ 1418

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-2D Well Diameter: 2 Inches

Samplers: Bill Smeal Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
6.57 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low Flow Date/Time: 7/11/13 0830

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: Low Flow Date/Time: 7/11/13 10:35 Total Volume of Water purged: 3.75

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.68	Alkalinity (g/g)	50 drops x 20 1000
Spec. Cond.(mS/cm)	4.32	Carbon Dioxide (mg/L)	240 x 2 480
Turbidity (NTU)	-33	Ferrous Iron (mg/L)	0.0
DO (mg/L)	0.00	Manganese (mg/L)	0.0
Temp.(°C)	18.09	Hydrogen Sulfide (mg/L)	75
ORP (mv)	-365		
TDS (g/L)	2.79		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	1 FILTER = 1000mL		
Hydrogen, Acetylene			

Comments: MN turned orange

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: INJ-02 Well Diameter: 4 Inches

Samplers: D. LICAK Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Field Parameters

Method: Low Flow Date/Time: 07/11/13 - 10:30 Total Volume of Water purged: 3.8

HORRIBA		HACH TEST KITS	
pH	6.29	Alkalinity (g/g)	
Spec. Cond.(mS/cm)	2.96	Carbon Dioxide (mg/L)	WATER/ICE ORANGE
Turbidity (NTU)	3.62	Ferrous Iron (mg/L)	
DO (mg/L)	0.81	Manganese (mg/L)	
Temp.(°C)	20.49	Hydrogen Sulfide (mg/L)	0.6
ORP (mv)	-91.00		
TDS (g/L)	1.89		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: _____

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility

Well ID: ~~PMW-9D 071113~~ PMW-2S-071113

Well Diameter: 2 inches

Samplers: C. Huey

Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
3.42	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low Flow Date/Time: 7/11/13 0808

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
0818	4.85	100	0.26	6.48	1.64	23.0	7.515	18.20	4.889	23.1	BLACK PARTICLES
0828	5.02	100	0.52	6.53	0.90	17.1	7.377	17.36	4.795	-10.3	
0838	5.31	100	0.78	6.52	0.65	23.3	7.435	17.14	4.831	-25.5	
0848	5.51	100	1.04	6.52	0.56	11.1	7.425	16.96	4.827	-21.0	CLEAR
0858	5.58	100	1.3	6.52	0.46	10.3	7.424	16.81	4.829	-24.9	
0908	5.62	100	1.56	6.51	0.43	10.56	7.425	16.69	4.826	-27.6	
0913	5.63	100	1.69	6.50	0.42	9.61	7.431	16.70	4.832	-37.0	
0918	5.63	100	1.82	6.52	0.43	10.09	7.438	16.71	4.835	-42.1	CLEAR
0923	5.65	~~120~~ 100	~~1.95~~ 1.98	6.51	0.42	11.32	7.444	16.50	4.837	-42.5	
0928	5.66	~~120~~ 100	~~2.08~~ 2.14	6.51	0.37	10.95	7.274	16.44	4.728	-45.7	
0933	5.67	~~120~~ 100	~~2.21~~ 2.3	6.51	0.37	10.12	7.245	16.35	4.709	-50.0	
0938	5.67	~~120~~ ~~100~~ CAL	~~2.34~~ 2.46	6.51	0.33	8.07	7.254	16.30	4.715	-51.6	
0943	5.67	~~120~~ ~~100~~	~~2.47~~ 2.62	6.51	0.34	7.61	7.292	16.28	4.739	-54.1	
~~0948~~		~~100~~	~~2.6~~								

Sampling Data

Method: Low Flow Date/Time: 7/11/13 0945 Total Volume of Water purged: 5.5 gal.

Field Parameters

HORRIBA	
pH	6.51
Spec. Cond.(mS/cm)	7.292
Turbidity (NTU)	7.61
DO (mg/L)	0.34
Temp.(°C)	16.28
ORP (mv)	-54.1
TDS (g/L)	4.739

HACH TEST KITS	
Alkalinity (g/g)	26 DROPS x 20 = 520
Carbon Dioxide (mg/L)	600
Ferrous Iron (mg/L)	0.5
Manganese (mg/L)	0.01
Hydrogen Sulfide (mg/L)	5.0

NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
	Parameter	Bottle	Pres.	Method
D	Select VOCs	3-40mL glass vial	HCl	EPA 8260
D	MEE	2-40mL glass vial	HCl	Lab SOP
D	Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
D	Dissolved norganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
	Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
	Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
D	Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
	Total Inorganic Carbon	1-120mL glass amber	None	SW9060
	Microbial Census	2-FILTERS		340ml 210ml
	Hydrogen Acetylene	1-20ml VIAL 2-40ml VIALS	NONE TRISODIUM PHOSPHATE	

Comments: COLLECTED DUPLICATE - PMW-102S_071113 @ 1201 (PARAMETERS MARKED W/ "D" ABOVE)

DISSOLVED HYDROGEN - START @ 1020 / STOP @ 1050

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: MW-105 Well Diameter: 2 Inches

Samplers: ~~MW-105~~ Monitored Natural Attenuation Sample Set (Y/N)?

Purging Data DORUK UCAK

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Date/Time:

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Field Parameters

Method: Low Flow Date/Time: 7/12/13 14:45 Total Volume of Water purged: 4.5

HORRIBA		HACH TEST KITS	
pH	7.13	Alkalinity (g/g)	280
Spec. Cond.(mS/cm)	2.070	Carbon Dioxide (mg/L)	274
Turbidity (NTU)	1.38	Ferrous Iron (mg/L)	1.9
DO (mg/L)	1.56	Manganese (mg/L)	0.0
Temp.(°C)	14.86	Hydrogen Sulfide (mg/L)	50
ORP (mv)	-24		
TDS (g/L)	7.345		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments:

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-19D 071213 Well Diameter: _____ Inches

Samplers: DFC Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: _____ Total Volume of Water purged: _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.49	Alkalinity (g/g)	280
Spec. Cond.(mS/cm)	2.40	Carbon Dioxide (mg/L)	122
Turbidity (NTU)	0.54	Ferrous Iron (mg/L)	0.4
DO (mg/L)	0.0	Manganese (mg/L)	0
Temp.(°C)	13.16	Hydrogen Sulfide (mg/L)	1.0
ORP (mv)	-274		
TDS (g/L)	1.54		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Collect sample MW-19D 071213 @1920

PARSONS

LOW FLOW WELL SAMPLING RECORD

OR188M-071213

Site Name: Ekonol Facility Well ID: [redacted] Well Diameter: 2 Inches

Samplers: A. Conrad Monitored Natural Attenuation Sample Set (Y/N)? —

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
DTW 6-26	Casing Volumes (gal/ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: Low flow Date/Time: 7/14/13 1325

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: Low flow Date/Time: 7/12/13 1450 Total Volume of Water purged: _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.75	Alkalinity (g/g)	22 DROPS 440
Spec. Cond.(mS/cm)	1.48	Carbon Dioxide (mg/L)	394
Turbidity (NTU)	1.35	Ferrous Iron (mg/L)	0.4
DO (mg/L)	1.88	Manganese (mg/L)	0.0
Temp.(°C)	22.78	Hydrogen Sulfide (mg/L)	5.0 +
ORP (mv)	-271		
TDS (g/L)	0.949		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: _____

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-13D_071213 Well Diameter: _____ Inches

Samplers: DPC Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: _____ Total Volume of Water purged: _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.7	Alkalinity (g/g)	340
Spec. Cond.(mS/cm)	3.23	Carbon Dioxide (mg/L)	142
Turbidity (NTU)	0.6	Ferrous Iron (mg/L)	1.0
DO (mg/L)	0.0	Manganese (mg/L)	0.0
Temp.(°C)	20.34	Hydrogen Sulfide (mg/L)	3.0
ORP (mv)	-292		
TDS (g/L)	2.05		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	3-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Collected sample MW-13D_071213 @ 1150
The Hach pH meter indicated 6.95

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: INJ-11D Well Diameter: 4 Inches

Samplers: C. Hugy Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.06 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/12/13 1023

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1033	7.26	150	0.40	6.37	0.86	12.63	3.957	16.95	2.573	-149.9	BLACK PARTICLES
1043	7.29	150	0.79	6.39	0.83	5.59	3.963	16.72	2.576	-189.5	FEWER PARTICLES
1053	7.29	150	1.19	6.41	0.84	3.25	3.941	16.99	2.562	-206.2	
1058	7.29	150	1.38	6.41	0.84	2.89	3.929	16.87	2.552	-219.7	
1103	7.29	150	1.58	6.42	0.80	3.89	3.801	16.63	2.466	-227.9	
1108	7.30	150	1.77	6.42	0.79	4.23	3.767	16.77	2.450	-231.9	
1113	7.31	150	1.97	6.45	0.77	3.80	3.762	16.71	2.444	-248.4	
1118	7.32	150	2.16	6.46	0.80	3.96	3.775	16.75	2.453	-256.6	CLEAR
1123	7.32	150	2.36	6.47	0.79	3.95	3.787	16.53	2.462	-261.3	
1128	7.32	150	2.55	6.47	0.79	3.85	3.812	16.41	2.477	-263.4	
1133	7.32	150	2.75	6.47	0.78	4.03	3.821	16.63	2.482	-267.3	
1138	7.32	150	2.94	6.47	0.79	4.15	3.861	16.43	2.509	-270.1	

Sampling Data

Method: LOW FLOW Date/Time: 7/12/13 1140 Total Volume of Water purged: 4.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.47	Alkalinity (g/g)	28 DROPS X 20 = 560
Spec. Cond.(mS/cm)	3.861	Carbon Dioxide (mg/L)	698
Turbidity (NTU)	4.15	Ferrous Iron (mg/L)	0.5
DO (mg/L)	0.79	Manganese (mg/L)	0.0
Temp.(°C)	16.43	Hydrogen Sulfide (mg/L)	4.0
ORP (mv)	-270.1		
TDS (g/L)	2.509		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: WATER TURNING BLACK AFTER ~ 20 SEC IN AIR. WATER CLEARED UP @ 1118

VOAs EFFERVESCING.

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-TD Well Diameter: 2 inches

Samplers: Bill Simons / Doruk Ucakin Monitored Natural Attenuation Sample Set (Y/N)? Y

DORUK

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.36 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/12/13 10:00

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1000		200									

Sampling Data

Method: low flow Date/Time: 7/12/13 10 35 Total Volume of Water purged: 2.98

Field Parameters

HORRIBA	
pH	7.34
Spec. Cond.(mS/cm)	4.51
Turbidity (NTU)	2.97
DO (mg/L)	0.01
Temp.(°C)	19.74
ORP (mv)	-359
TDS (g/L)	2.89

HACH TEST KITS	
Alkalinity (g/g)	~~50 drops x20~~ 1,000
Carbon Dioxide (mg/L)	380 x 2 760
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	>5

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
✓ Select VOCs	3-40mL glass vial	HCl	EPA 8260
✓ MEE	2-40mL glass vial	HCl	Lab SOP
✓ Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
✓ Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
✓ Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
✓ Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
✓ Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
✓ Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: VOAs effervescing

MW Sample orange

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: INJ-8D 071213 Well Diameter: 4 Inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.08 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/12/13 0812

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
0822	7.38	150	0.40	7.13	2.06	6.34	2.941	16.63	1.911	114.2	CLEAR
0832	7.99	150	0.79	7.19	1.57	7.59	2.952	16.72	1.919	84.2	
0842	7.96	125	1.09	7.21	1.41	7.40	2.949	16.86	1.915	62.4	
0852	7.98	135	1.44	7.22	1.32	7.16	2.957	16.55	1.925	41.3	CLEAR
0857	7.99	↓	1.62	7.22	1.29	7.24	2.957	16.39	1.922	34.6	
0902	8.07	99 <Alg	1.79	7.22	1.26	5.68	2.954	16.42	1.920	25.9	
0907	8.01		1.97	7.23	1.22	7.39	2.962	16.43	1.922	19.6	
0912	8.01		2.14	7.22	1.19	7.93	2.958	16.53	1.926	14.7	
0917	8.01		2.32	7.21	1.14	7.42	2.958	16.56	1.922	7.3	
0922	8.01		2.49	7.20	1.12	8.42	2.961	16.53	1.924	1.8	
0927	8.01		2.67	7.16	1.06	15.3	2.945	16.59	1.914	-3.9	FEW PARTICLES
0932	8.01		2.84	7.15	1.04	15.1	2.943	16.72	1.913	-4.6	
0937	8.01		3.02	7.12	1.00	14.6	2.942	16.82	1.912	-6.9	
0942	8.02		3.19	7.12	0.99	13.9	2.937	16.92	1.909	-8.1	

Sampling Data

Method: LOW FLOW Date/Time: 7/12/13 0945 Total Volume of Water purged: 3.75

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.12	Alkalinity (g/g)	NM
Spec. Cond.(mS/cm)	2.937	Carbon Dioxide (mg/L)	NM
Turbidity (NTU)	13.9	Ferrous Iron (mg/L)	NM
DO (mg/L)	0.99	Manganese (mg/L)	NM
Temp.(°C)	16.92	Hydrogen Sulfide (mg/L)	0.0
ORP (mv)	-8.1		
TDS (g/L)	1.909		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: GAS BUBBLES COMING THROUGH TUBING WHILE PURGING/SAMPLING.

NM - WATER TURNED BLACK -- COULD NOT RUN HACH TESTS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: MW-160_071213 Well Diameter: _____ Inches

Samplers: DPC Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: _____ Total Volume of Water purged: _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.5	Alkalinity (g/g)	280
Spec. Cond.(mS/cm)	2.81	Carbon Dioxide (mg/L)	136
Turbidity (NTU)	7.38	Ferrous Iron (mg/L)	0.4
DO (mg/L)	0.0	Manganese (mg/L)	0.0
Temp.(°C)	17.87	Hydrogen Sulfide (mg/L)	1.5
ORP (mv)	-289		
TDS (g/L)	1.81		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments: Collect sample MW-160_071213 @ 0925

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: RMW-4D Well Diameter: 2 Inches

Samplers: Bill Simons / Oskar Vcak Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
7.22	Casing Volumes (gal/ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: low flow Date/Time: 0815

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: low flow Date/Time: 7/12/13 0900 Total Volume of Water purged: 2.88

Field Parameters

HORRIBA	
pH	6.85
Spec. Cond.(mS/cm)	3.40
Turbidity (NTU)	2.34
DO (mg/L)	0.02
Temp.(°C)	17.84
ORP (mv)	-352
TDS (g/L)	2.17

HACH TEST KITS	
Alkalinity (g/g)	50 drops x 20 = 1,000
Carbon Dioxide (mg/L)	476 x 2 = 952
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	> 3
Hydrogen Sulfide (mg/L)	> 5

NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved organics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments:

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: INJ-12D Well Diameter: 4 Inches

Samplers: Derek Veak, Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
8.05	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/15/13 ~~1545~~ 1535

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
~~1435~~											Pump blocked install new tubing
1545	8.40										

Sampling Data

Method: low flow Date/Time: 7/15/13 1620 ~~1410~~ Total Volume of Water purged: _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH	4.00	Alkalinity (g/g)	NA
Spec. Cond.(mS/cm)	3.77	Carbon Dioxide (mg/L)	NA
Turbidity (NTU)	1260	Ferrous Iron (mg/L)	NA
DO (mg/L)	0.0	Manganese (mg/L)	NA
Temp.(°C)	21.23	Hydrogen Sulfide (mg/L)	3.0
ORP (mv)	-469		
TDS (g/L)	2.41		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: _____

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: INJ-UD_071513 Well Diameter: _____ Inches

Samplers: DPC Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: _____ Total Volume of Water purged: _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.40	Alkalinity (g/g)	TOO
Spec. Cond.(mS/cm)	5.22	Carbon Dioxide (mg/L)	DARK
Turbidity (NTU)	12.2	Ferrous Iron (mg/L)	FOR
DO (mg/L)	0.0	Manganese (mg/L)	ANALYSIS
Temp.(°C)	20.79	Hydrogen Sulfide (mg/L)	ST
ORP (mv)	-390		
TDS (g/L)	3.33		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	FILTER1: 30mL FILTER2: 90mL		
Hydrogen, Acetylene	2 VOAs 1 VIAL	Bubble for 15 min @ 240mL/min	

Comments: Collect sample INJ-UD_071513 @ 1340

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: OR-135M Well Diameter: 2 Inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.51 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/15/13 1202

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1212	8.20	100	0.26	6.69	1.00	10.09	4.690	19.14	3.047	-45.4	FEW PARTICLES
1222	8.16	100	0.52	6.65	0.97	17.3	4.706	418.87	3.059	-65.5	
1232	8.25	130	0.86	6.65	0.96	9.16	4.711	18.89	3.062	-84.6	CLEAR - TURNS BLACK
1242	8.23	130	1.2	6.62	0.90	9.04	4.765	18.84	3.095	-93.5	
1247	8.23	130	1.37	6.62	2.86	9.14	4.768	18.78	3.098	-90.4	
1252	8.23	~~130~~ 150	~~1.54~~ 1.57	6.62	0.88	8.96	4.751	18.92	3.087	-95.2	
1257	8.24	150	1.77	6.61	0.85	9.84	4.762	18.95	3.096	-100.1	
1302	8.23	150	1.97	6.62	0.86	9.96	4.769	19.06	3.099	-102.1	
1307	8.22	150	2.17	6.62	0.85	10.01	4.774	19.39	3.100	-103.4	
1312	8.21	150	2.37	6.60	0.89	10.10	4.778	19.18	3.106	-113.1	
1317	8.21	150	2.57	6.60	0.89	10.05	4.780	19.28	3.107	-116.3	
1322	8.22	150	2.77	6.60	0.90	10.10	4.781	19.39	3.106	-119.2	

Sampling Data

Method: LOW FLOW Date/Time: 7/15/13 1325 Total Volume of Water purged: 5.25 gal.

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.60	Alkalinity (g/g)	WATER TURNED
Spec. Cond.(mS/cm)	4.781	Carbon Dioxide (mg/L)	BLACK - COULD
Turbidity (NTU)	10.10	Ferrous Iron (mg/L)	NOT RUN
DO (mg/L)	0.90	Manganese (mg/L)	TESTS.
Temp.(°C)	19.39	Hydrogen Sulfide (mg/L)	1.0
ORP (mv)	-119.2		
TDS (g/L)	3.106		

* NOTE * HACH test kits are only required for MNA analysis wells.

DTW @ 8.22

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	2- FILTERS	NONE	FILTERED 340, 410
Hydrogen, Acetylene	1- 20ml VIAL 2- 40ml VIALS	NONE POTASSIUM PHOSPHATE	

Comments: VOAS EFFERVESCING.

DISSOLVED HYDROGEN START @ 1402 / STOP @ 1427

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: ENS-13D Well Diameter: 4" Inches

Samplers: Derek Veale / Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
6.55	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/15/13

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: low flow Date/Time: 7/15/13 1230 Total Volume of Water purged: 12.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.03	Alkalinity (g/g)	NA
Spec. Cond.(mS/cm)	3.41	Carbon Dioxide (mg/L)	NA
Turbidity (NTU)	601	Ferrous Iron (mg/L)	NA
DO (mg/L)	0.00	Manganese (mg/L)	NA
Temp.(°C)	17.02	Hydrogen Sulfide (mg/L)	>5
ORP (mv)	-431		
TDS (g/L)	2.18		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Hach Water oxidized, turned black
Some ~~erroneous~~ erroneous turbidity readings

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: RMW-20 071513 Well Diameter: _____ Inches

Samplers: DPL Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Field Parameters

Method: _____ Date/Time: _____ Total Volume of Water purged: _____

HORRIBA		HACH TEST KITS	
pH	6.40	Alkalinity (g/g)	TOO
Spec. Cond.(mS/cm)	3.39	Carbon Dioxide (mg/L)	DARK
Turbidity (NTU)	17.8	Ferrous Iron (mg/L)	FOR
DO (mg/L)	0.0	Manganese (mg/L)	ANALYSIS
Temp.(°C)	20.30	Hydrogen Sulfide (mg/L)	0.3
ORP (mv)	-376		
TDS (g/L)	224		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	FILTER1: 330mL FILTER2: 420mL		
Hydrogen, Acetylene			

Comments: collect sample RMW-20 071513 @ 10:20

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: FMW-1D Well Diameter: 4 Inches

Samplers: Derek Veach / Bill Simon Monitored Natural Attenuation **Sample** Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.15	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/16/13 1415

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1425											

Sampling Data

Method: low flow Date/Time: 7/16/13 1700 Total Volume of Water purged: 7 gal

Field Parameters

HORRIBA	
pH	
Spec. Cond.(mS/cm)	
Turbidity (NTU)	
DO (mg/L)	
Temp.(°C)	
ORP (mv)	
TDS (g/L)	

HACH TEST KITS	
Alkalinity (g/g)	
Carbon Dioxide (mg/L)	
Ferrous Iron (mg/L)	
Manganese (mg/L)	
Hydrogen Sulfide (mg/L)	5

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Pumped dry

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-6D Well Diameter: 2 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
8.12	Casing Volumes (gal/ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: low flow Date/Time: 7/14/13 1:30

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
13:40	10.8	150	0.6	6.93	0.12	4.91	3.48	19.05	2.22	-343	
7/15/13											
10:30	Purged dry										

Sampling Data

Method: low flow Date/Time: 7/16/13 1615 Total Volume of Water purged: 3.3

Field Parameters

HORRIBA	
pH	7.30
Spec. Cond.(mS/cm)	3.47
Turbidity (NTU)	6.33
DO (mg/L)	0.00
Temp.(°C)	18.94
ORP (mv)	-335
TDS (g/L)	2.22

HACH TEST KITS	
Alkalinity (g/g)	50 X 20 1,000
Carbon Dioxide (mg/L)	310 X 2 620
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	>5

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census	200 mL			
Hydrogen, Acetylene				

Comments: Only had one remaining microbial filter

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-60 Well Diameter: 2 inches

Samplers: R. Pinnell Monitored Natural Attenuation Sample Set (Y/N)?

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
DTW = 15.42 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low flow Date/Time: 7/15/13

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1550	15.42	1200	0								
1615	22.78	1200	1.5		WELL PURGED DRY @					1615	

Sampling Data

Method: Date/Time: Total Volume of Water purged:

Field Parameters

HORRIBA		HACH TEST KITS	
pH	~~7.00~~	Alkalinity (g/g)	
Spec. Cond.(mS/cm)		Carbon Dioxide (mg/L)	
Turbidity (NTU)		Ferrous Iron (mg/L)	
DO (mg/L)		Manganese (mg/L)	
Temp.(°C)		Hydrogen Sulfide (mg/L)	
ORP (mv)		* NOTE * HACH test kits are only required for MNA analysis wells.	
TDS (g/L)			

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

7/15/13

Comments: Purged well dry, no parameters recorded. Will leave dry on 7/11/13. Will sample tomorrow (7/16/13).

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-55-071603 Well Diameter: 2 Inches

Samplers: DK Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: 15:25 Total Volume of Water purged: 2.6

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.36	Alkalinity (g/g)	300
Spec. Cond.(mS/cm)	2.77	Carbon Dioxide (mg/L)	192
Turbidity (NTU)	7.82	Ferrous Iron (mg/L)	0.8
DO (mg/L)	0.0	Manganese (mg/L)	0.0
Temp.(°C)	17.18	Hydrogen Sulfide (mg/L)	0
ORP (mv)	-53		
TDS (g/L)	1.52		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Collect sample MW-55-071603 @ 15:25

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: OR-114sm_071613 Well Diameter: 2 Inches

Samplers: C. Hurley Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.46 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low Flow Date/Time: 7/16/13 1415

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1425	7.70	150	0.39	6.67	1.18	4.40	4.884	18.22	3.175	-102.4	CLEAR W/ PARTICLES
1435	7.73	150	0.79	6.67	0.69	4.96	4.866	17.66	3.162	-133.7	SLIGHT YELLOW COLOR
1445	7.75	150	1.18	6.67	0.35	4.34	4.823	17.36	3.133	-154.1	TURNING BLACK
1455	7.79	150	1.58	6.66	0.40	3.83	4.850	16.74	3.155	-170.8	
1500	7.78	150	1.76	6.67	0.37	4.29	4.838	17.15	3.135	-173.5	
1505	7.78	150	1.96	6.67	0.30	4.36	4.812	17.56	3.131	-180.9	
1510	7.77	150	2.15	6.67	0.31	4.59	4.813	17.76	3.126	-184.5	
1515	7.76	150	2.35	6.69	0.30	4.60	4.820	18.12	3.133	-185.4	
1520	7.75	150	2.54	6.68	0.26	4.53	4.805	18.79	3.124	-190.9	
1525	7.75	150	2.74	6.68	0.25	4.69	4.812	18.91	3.130	-191.2	

Sampling Data

Method: Low Flow Date/Time: 7/16/13 1530 Total Volume of Water purged: 5.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.68	Alkalinity (g/g)	WATER
Spec. Cond.(mS/cm)	4.812	Carbon Dioxide (mg/L)	TURNED
Turbidity (NTU)	4.69	Ferrous Iron (mg/L)	BLACK
DO (mg/L)	0.25	Manganese (mg/L)	—
Temp.(°C)	18.91	Hydrogen Sulfide (mg/L)	3.0
ORP (mv)	-191.2		
TDS (g/L)	3.130		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
	Parameter	Bottle	Pres.	Method
+D	Select VOCs	3-40mL glass vial	HCl	EPA 8260
+D	MEE	2-40mL glass vial	HCl	Lab SOP
+D	Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
+D	Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
	Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
	Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
+D	Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
	Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
	Microbial Census	1-FILTER	NONE	FILTERED 365sm1
	Hydrogen, Acetylene	1-20mL VIAL 2-40mL VIALS	NONE Na_3PO_4	

RAN OUT OF FILTERS

VOAs EFFERVESCING

Comments: COLLECTED DUPLICATE OR-114sm_071613 @ 1201 (PARAMETERS MARKED ABOVE w/ "D")

DISSOLVED HYDROGEN - START @ 1617 / STOP @ 1642

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-15_071613 Well Diameter: _____ Inches

Samplers: DPC Monitored Natural Attenuation **Sample Set (Y/N)?** _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: _____ Total Volume of Water purged: _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.90	Alkalinity (g/g)	240
Spec. Cond.(mS/cm)	3.05	Carbon Dioxide (mg/L)	190
Turbidity (NTU)	2.84	Ferrous Iron (mg/L)	1.0
DO (mg/L)	0.00	Manganese (mg/L)	0.0
Temp.(°C)	23.24	Hydrogen Sulfide (mg/L)	0.0
ORP (mv)	-89		
TDS (g/L)	1.96		

NOTE HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Collect sample MW-15_071613 @ 1310

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-9S_071613 Well Diameter: 2 Inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.48 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low Flow Date/Time: 7/16/13 1020

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1030	8.03	100	0.26	6.82	3.05	4.95	5.318	17.77	3.458	95.0	CLEAR
1040	8.81	100	0.52	6.79	2.42	2.50	5.230	17.81	3.387	58.1	
1050	8.87	100	0.79	6.81	2.19	1.94	5.173	18.60	3.367	43.5	
1100	8.89	100	1.05	6.82	2.02	1.99	5.201	18.26	3.381	63.0	
1110	9.21	100	1.31	6.84	1.87	2.06	5.199	18.15	3.379	53.2	CLEAR
1115	9.22	100	1.44	6.86	1.76	2.10	5.224	18.36	3.396	43.2	
1120	9.24	100	1.57	6.86	1.65	1.96	5.239	18.49	3.406	42.1	
1125	9.25	100	1.70	6.86	1.61	1.89	5.248	18.61	3.403	36.7	
1130	9.25	100	1.83	6.86	1.52	1.86	5.253	18.49	3.413	35.9	
1135	9.25	100	1.96	6.87	1.49	1.94	5.257	18.33	3.419	34.3	
1140	9.25	100	2.09	6.87	1.27	1.98	5.260	18.26	3.421	34.0	
1145	9.26	100	2.22	6.87	1.25	1.90	5.235	18.38	3.402	30.0	
1150	9.26	100	2.35	6.87	1.20	1.84	5.242	18.05	3.407	27.8	CLEAR
1155	9.26	100	2.48	6.87	1.19	1.76	5.244	18.05	3.396	26.3	

Sampling Data

Method: Low Flow Date/Time: 7/16/13 1205 Total Volume of Water purged: 4.0 gal.

Field Parameters

1200	9.24	100	2.61	6.87	1.16	1.81	5.248	18.06	3.394	25.9	

HORRIBA	
pH	6.87
Spec. Cond.(mS/cm)	5.248
Turbidity (NTU)	1.81
DO (mg/L)	1.16
Temp.(°C)	18.06
ORP (mv)	25.9
TDS (g/L)	3.394

HACH TEST KITS	
Alkalinity (g/g)	21 DROPS X20 420
Carbon Dioxide (mg/L)	300
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	0.0

* NOTE * HACH test kits are only required for MNA analysis wells.

+ MS/MSD

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census	1-FILTER	NONE	FILTERED 100 ml
Hydrogen, Acetylene	1-20ml VIAL 2-40ml VIALS		

Comments: COLLECTED MS/MSD (VOCS ONLY-6) PMW-9S_071613 MS / PMW-9S_071613 MSD

DISSOLVED HYDROGEN - START @1245/STOP @1315

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-3D Well Diameter: 2 Inches

Samplers: Bill Simons / Dorrick Vent Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.72	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/16/13 ~~1045~~ 1055

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
~~1055~~											
1105	9.95	175		6.72	0.0	1.50	397	20.4	2.55	-351	
1115	10.84	100		6.65	0.0	1.34	368	21.85	2.56	-355	
1125	11.26	100									

Sampling Data

Method: low flow Date/Time: 7/16/13 1225 Total Volume of Water purged: 2.5

Field Parameters

HORRIBA	
pH	
Spec. Cond.(mS/cm)	
Turbidity (NTU)	
DO (mg/L)	
Temp.(°C)	
ORP (mv)	
TDS (g/L)	

HACH TEST KITS	
Alkalinity (g/g)	40 drops x 20 800
Carbon Dioxide (mg/L)	345 x 2 690
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	>5

NOTE HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
✓ Select VOCs	3-40mL glass vial	HCl	EPA 8260
✓ MEE	2-40mL glass vial	HCl	Lab SOP
✓ Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
✓ Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
✓ Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
✓ Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
✓ Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
✓ Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments:

LOW FLOW WELL SAMPLING RECORD

Site Name: Exxon Facility Well ID: MW-12D_071613 Well Diameter: 4 Inches

Samplers: RP Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Field Parameters

Method: GeoPump Date/Time: 9/16/13 1155 Total Volume of Water purged: _____

HORRIBA		HACH TEST KITS	
pH		Alkalinity (g/g)	
Spec. Cond.(mS/cm)		Carbon Dioxide (mg/L)	
Turbidity (NTU)		Ferrous Iron (mg/L)	
DO (mg/L)		Manganese (mg/L)	
Temp.(°C)		Hydrogen Sulfide (mg/L)	
ORP (mv)			
TDS (g/L)			

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: COLLECTED FOR ORTHO-PHOSPHATE ONLY, NO NEED TO PURGE AS WELL WAS PURGED WITHIN 24 HOURS

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: IVJ-01 Well Diameter: 4 Inches

Samplers: Derek Hall / Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.65	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low Flow Date/Time: 7/16/13 0830

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: Low Flow Date/Time: 7/16/13 1010 Total Volume of Water purged: 4.97

Field Parameters

HORRIBA		HACH TEST KITS	
pH	5.98	Alkalinity (g/g)	NA
Spec. Cond.(mS/cm)	6.12	Carbon Dioxide (mg/L)	NA
Turbidity (NTU)	OL	Ferrous Iron (mg/L)	NA
DO (mg/L)	0.00	Manganese (mg/L)	NA
Temp.(°C)	18.53	Hydrogen Sulfide (mg/L)	>5
ORP (mv)	-471		
TDS (g/L)	3.84		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Water is black, only can conduct H_2S

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: RMW-10_071613 Well Diameter: _____ Inches

Samplers: DLC Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Field Parameters

Method: _____ Date/Time: 09:15 Total Volume of Water purged: _____

HORRIBA		HACH TEST KITS	
pH	7.18	Alkalinity (g/g)	700
Spec. Cond.(mS/cm)	1.85	Carbon Dioxide (mg/L)	136
Turbidity (NTU)	1.75	Ferrous Iron (mg/L)	0.6
DO (mg/L)	0.0	Manganese (mg/L)	0.0
Temp.(°C)	18.69	Hydrogen Sulfide (mg/L)	0.0
ORP (mv)	-272		
TDS (g/L)	1.20		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Collect sample RMW-10_071613 @ 0915

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-10S_071613 Well Diameter: 2 Inches

Samplers: C. Hagy Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
6.52	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low Flow Date/Time: 7/15/13 1020

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1030	7.94	100	0.26	6.89	5.43	1.48	4.745	17.37	3.085	121.8	CLEAR
1040	8.40	100	0.52	6.91	4.70	1.63	4.719	18.59	3.068	101.3	
1050	8.90	100	0.78	6.93	4.33	0.98	4.717	18.28	3.067	91.7	
1055	9.36	100	0.91	6.97	4.09	1.01	4.683	18.29	3.042	84.1	
1100	10.36	500	1.51	7.00	4.11	1.12	4.715	18.68	3.064	80.8	
1102	11.59	Pumping Dry									

Sampling Data

Field Parameters

Method: Low Flow Date/Time: 7/16/13 0830 Total Volume of Water purged: 2.5 gal.

HORRIBA	
pH	7.00
Spec. Cond.(mS/cm)	4.715
Turbidity (NTU)	1.12
DO (mg/L)	4.11
Temp.(°C)	18.68
ORP (mv)	80.8
TDS (g/L)	3.064

HACH TEST KITS	
Alkalinity (g/g)	19 DROPS X20 380
Carbon Dioxide (mg/L)	342
Ferrous Iron (mg/L)	0.2
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	0.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: WATER LEVEL DROPPING - PUMPED DRY @ 1102 (1.75 gal.)

7/16/13 DTW @ 7.65 (0820) SAMPLED DISSOLVED HYDROGEN - START @ 0908 / STOP @ 0938

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-75 Well Diameter: 2 Inches

Samplers: DOUG MCAVE Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: 7/17/13 08:30 Total Volume of Water purged: _____

Field Parameters

HORRIBA	
pH	
Spec. Cond.(mS/cm)	
Turbidity (NTU)	
DO (mg/L)	
Temp.(°C)	
ORP (mv)	
TDS (g/L)	

HACH TEST KITS	
Alkalinity (g/g)	320
Carbon Dioxide (mg/L)	264
Ferrous Iron (mg/L)	1.8
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	0.3

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	3-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: _____

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-7S Well Diameter: 2 Inches

Samplers: C. Hurff Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.39 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/17/13 0830

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
0840	7.88	100	0.26	6.71	4.36	5.78	5.334	20.32	3.471	159.2	CLEAR
0850	8.30	100	0.52	6.72	3.93	3.55	5.252	20.45	3.414	149.3	
0900	8.62	100	0.78	6.74	3.57	1.98	5.289	20.41	3.436	133.9	
0905	9.40	500	1.44	6.75	2.29	1.38	5.499	18.47	3.582	124.9	CLEAR
0910	9.50	125	1.60	6.77	1.69	6.11	5.571	19.29	3.621	117.5	
0915	9.60	100	1.73	6.79	1.59	4.53	5.665	20.60	3.683	109.1	
0920	9.65	100	1.87	6.85	1.43	2.71	5.685	21.84	3.695	102.0	
0925	9.66	100	2.0	6.90	1.38	2.96	5.709	21.88	3.730	95.1	
0930	9.68	100	2.13	6.82	1.36	3.11	5.713	21.56	3.736	93.2	
0935	9.69	100	2.27	6.81	1.33	3.02	5.725	21.32	3.750	87.6	CLEAR
0940	9.70	100	2.4	6.81	1.30	2.94	5.736	21.21	3.766	81.1	
0945	9.71	100	2.53	6.81	1.29	2.86	5.771	21.20	3.789	79.2	
0950	9.73	100	2.66	6.81	1.27	3.11	5.779	21.10	3.792	77.8	

Sampling Data

Method: LOW FLOW Date/Time: 7/17/13 0955 Total Volume of Water purged: 2.8

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.81	Alkalinity (g/g)	26 DROPS X 20 = 520
Spec. Cond.(mS/cm)	5.779	Carbon Dioxide (mg/L)	374
Turbidity (NTU)	~~1.27~~ 3.11	Ferrous Iron (mg/L)	2.0
DO (mg/L)	1.27	Manganese (mg/L)	0.0
Temp.(°C)	21.10	Hydrogen Sulfide (mg/L)	0.0
ORP (mv)	77.8	* NOTE * HACH test kits are only required for MNA analysis wells.	
TDS (g/L)	3.792		

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: WATER LEVEL DROPPING. @ 0900 FLOW TO 500ml/min. PUMP WELL DRY.
0905 WATER LEVEL NOT DROPPING AS MUCH. FLOW BACK TO 125 ml/min.

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-4D Well Diameter: 2 Inches

Samplers: Bill Sweet Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.22	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/17/13 1015

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1025											

Sampling Data

Method: low flow Date/Time: 7/17/13 1120 Total Volume of Water purged: 2.6

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.88	Alkalinity (g/g)	75 X 20 = 1500
Spec. Cond.(mS/cm)	3.14	Carbon Dioxide (mg/L)	485 X 2 = 970
Turbidity (NTU)	1.51	Ferrous Iron (mg/L)	0.0
DO (mg/L)	0.00	Manganese (mg/L)	0.0
Temp.(°C)	20.12	Hydrogen Sulfide (mg/L)	>5
ORP (mv)	-353		
TDS (g/L)	2.59		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
✓ Select VOCs	3-40mL glass vial	HCl	EPA 8260
✓ MEE	2-40mL glass vial	HCl	Lab SOP
✓ Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
✓ Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
✓ Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
✓ Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
✓ Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
✓ Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Clear water

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-50.072713 Well Diameter: _____ Inches

Samplers: DPC Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	3-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: 11:40 Total Volume of Water purged: _____

Field Parameters

HORRIBA	
pH	6.95
Spec. Cond.(mS/cm)	3.95
Turbidity (NTU)	33.7
DO (mg/L)	0.0
Temp.(°C)	18.95
ORP (mv)	-343
TDS (g/L)	2.75

HACH TEST KITS	
Alkalinity (g/g)	920
Carbon Dioxide (mg/L)	676
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	5+

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments _____

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: OR-109SM_071713 Well Diameter: 2 Inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.52 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/17/13 1039

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1049	7.93	150	0.39	6.65	1.09	6.41	3.920	21.09	2.549	-166.0	CLEAR
1054	7.98	150	0.79	6.67	0.36	6.68	3.922	20.55	2549	-208.9	
1109	7.99	150	1.18	6.67	0.37	4.73	3.917	20.40	2.546	-216.7	
1114	7.99	150	1.58	6.67	0.37	4.50	3.902	20.30	2.536	-224.8	
1124	7.99	150	1.77	6.67	0.36	4.67	3.891	20.30	2.529	-236.7	
1129	7.99	150	1.97	6.67	0.37	2.59	3.891	20.35	2529	-241.4	
1134	8.00	150	~~2.36~~	6.67	0.36	2.48	3.886	20.34	2.526	-254.2	CLEAR
1139	8.00	150	~~2.76~~ 2.36	6.67	0.35	2.36	3.883	20.40	2.524	-256.4	
1144	8.00	150	~~2.75~~ 2.73	6.67	0.34	2.29	3.881	20.46	2.523	-257.9	
1149	8.01	150	2.75	6.67	0.33	2.35	3.884	20.47	2.524	-260.5	

Sampling Data

Method: LOW FLOW Date/Time: 7/17/13 1150 Total Volume of Water purged: 3.25

Field Parameters

HORRIBA	
pH	6.67
Spec. Cond.(mS/cm)	3.884
Turbidity (NTU)	2.35
DO (mg/L)	0.33
Temp.(°C)	20.47
ORP (mv)	-260.5
TDS (g/L)	~~2.543~~ CAL 2.524

HACH TEST KITS	
Alkalinity (g/g)	36 DROPS x 20 = 720
Carbon Dioxide (mg/L)	300
Ferrous Iron (mg/L)	0.1
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	4.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
	Parameter	Bottle	Pres.	Method
+D	Select VOCs	3-40mL glass vial	HCl	EPA 8260
+D	MEE	2-40mL glass vial	HCl	Lab SOP
+D	Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
+D	Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
	Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
	Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
+D	Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
	Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
	Microbial Census			
	Hydrogen, Acetylene			

Comments: COLLECTED DUPLICATE OR-109SM_071713 @ 1201 (PARAMETERS MARKED W/ "D" ABOVE)

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: MW-35S Well Diameter: 2 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
4.95	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/17/13 0845

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
0855		200									

Sampling Data

Method: low flow Date/Time: 7/17/13 1300 Total Volume of Water purged: 3.25

Field Parameters

HORRIBA	
pH	7.11
Spec. Cond.(mS/cm)	13.4
Turbidity (NTU)	10.52
DO (mg/L)	0.14
Temp.(°C)	22.89
ORP (mv)	-120
TDS (g/L)	8.32

HACH TEST KITS	
Alkalinity (g/g)	NA
Carbon Dioxide (mg/L)	NA
Ferrous Iron (mg/L)	NA
Manganese (mg/L)	NA
Hydrogen Sulfide (mg/L)	0.1

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Pumped dry @ 11.75'. Sample too dark for most Hach tests.
1300 → 9.93

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: OR-10sm_071713 Well Diameter: 2 Inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.41 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/17/13 1313

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1323	7.91	150	0.39	6.57	1.31	9.06	4.510	19.11	2.932	-124.6	
1333	7.99	150	0.79	6.58	0.68	5.60	4.624	18.88	3.002	-143.9	CLEAR / THEN
1343	8.01	150	1.18	6.62	0.59	2.78	4.912	18.73	3.191	-180.5	TURNS BLACK.
1353	8.04	150	1.57	6.63	0.60	2.86	4.937	18.67	3.209	-188.6	
1358	8.05	150	1.76	6.64	0.60	2.65	4.984	18.82	3.239	-198.4	
1403	8.05	150	1.96	6.64	0.58	5.32	5.056	18.84	3.287	-208.9	CLEAR - SAME
1408	8.06	150	2.15	6.65	0.58	2.80	5.107	18.78	3.320	-210.1	
1413	8.06	150	2.35	6.65	0.60	2.75	5.133	18.64	3.337	-212.8	
1418	8.06	150	2.54	6.66	0.59	2.98	5.137	18.72	3.340	-214.7	
1423	8.07	150	2.73	6.66	0.58	3.29	5.142	18.83	3.341	-216.2	CLEAR - SAME

Sampling Data

Method: LOW FLOW Date/Time: 7/17/13 1425 Total Volume of Water purged: 3 5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.66	Alkalinity (g/g)	—
Spec. Cond.(mS/cm)	5.142	Carbon Dioxide (mg/L)	—
Turbidity (NTU)	3.29	Ferrous Iron (mg/L)	—
DO (mg/L)	0.58	Manganese (mg/L)	—
Temp.(°C)	18.83	Hydrogen Sulfide (mg/L)	3.0
ORP (mv)	-216.2		
TDS (g/L)	3.341		

* NOTE * HACH test kits are only required for MNA analysis wells.

+ MS/MSD

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

VOAs EFFERVESCING

Comments: COLLECTED MS/MSD - OR-10SM071713 MS / OR-10SM_071713 MSD (VOCs ONLY)
WATER CLEAR THEN TURNS BLACK.

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: MW-85_071713 Well Diameter: _____ Inches

Samplers: DPG Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: 1500 Total Volume of Water purged: _____

Field Parameters

HORRIBA	
pH	
Spec. Cond.(mS/cm)	
Turbidity (NTU)	
DO (mg/L)	
Temp.(°C)	
ORP (mv)	
TDS (g/L)	

HACH TEST KITS	
Alkalinity (g/g)	500
Carbon Dioxide (mg/L)	282
Ferrous Iron (mg/L)	0.6
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	0.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen; Acetylene				

Comments 85 1500

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-7D Well Diameter: 4 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)?

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
7.82	Casing Volumes (gal/ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: low flow Date/Time: 7/17/13 ~~1405~~ 1435 ~~1430~~

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1436											cloudy
1445											

Sampling Data

Method: low flow Date/Time: 7/17/13 1540 Total Volume of Water purged: 2.7

Field Parameters

HORRIBA	
pH	6.73
Spec. Cond.(mS/cm)	3.05
Turbidity (NTU)	8.05
DO (mg/L)	1.21
Temp.(°C)	26.24
ORP (mv)	-359
TDS (g/L)	1.95

HACH TEST KITS	
Alkalinity (g/g)	50 x 20 1,000
Carbon Dioxide (mg/L)	363 x 2 726
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	75

*NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen/ Acetylene				

Comments

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-8S_07 Well Diameter: 2 Inches

Samplers: C. Hugy Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.52 Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/17/13 ~~1459~~ 1450 CAN

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1500	8.56	125	0.33	6.85	1.09	10.27	4.161	20.69	3.097	-66.1	CLEAR w/ FEW PARTICLES
1510	8.69	100	0.59	6.83	0.91	11.05	4.747	20.99	3.080	-62.9	
1520	8.72	100	0.85	6.83	0.76	7.34	4.930	20.84	3.203	-75.5	
1530	8.75	100	1.11	6.84	0.69	7.59	5.111	20.61	3.323	-78.6	
1540	8.76	100	1.37	6.83	0.62	7.13	5.194	20.88	3.377	-79.8	
1550	8.80	~~125~~ 100	~~1.63~~ 1.63	6.83	0.59	6.86	5.220	20.91	3.395	-100.0	
1555	8.81	~~125~~ 100	~~1.76~~ 1.76	6.84	0.58	6.52	5.271	20.95	3.429	-96.3	
1600	8.84	~~125~~ 100	~~1.89~~ 1.89	6.84	0.56	6.11	5.379	20.84	3.448	-117.7	CLEAR
1605	8.85	~~125~~ 100	~~2.02~~ 2.02	6.83	0.54	5.96	5.380	21.00	3.469	-118.8	
1610	8.86	~~125~~ 100	~~2.15~~ 2.15	6.81	0.55	5.46	5.393	20.98	3.481	-119.6	
1615	8.88	~~125~~ 100	~~2.28~~ 2.28	6.81	0.53	5.81	5.400	20.92	3.490	-121.7	
1620	8.90	~~125~~ 100	~~2.41~~ 2.41	6.80	0.53	5.90	5.406	20.86	3.487	-121.6	
~~1625~~ CAN		~~100~~	~~2.54~~								
~~1630~~		~~100~~	~~2.67~~ CAN								

Sampling Data

Method: LOW FLOW Date/Time: 7/17/13 ~~1635~~ 1625 CAN Total Volume of Water purged: 3.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.80	Alkalinity (g/g)	26 DROPS x20 520
Spec. Cond.(mS/cm)	5.406	Carbon Dioxide (mg/L)	534
Turbidity (NTU)	5.90	Ferrous Iron (mg/L)	0.1
DO (mg/L)	0.53	Manganese (mg/L)	0.1
Temp.(°C)	20.86	Hydrogen Sulfide (mg/L)	4.8
ORP (mv)	-121.6	* NOTE * HACH test kits are only required for MNA analysis wells.	
TDS (g/L)	3.487		

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments:

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-14D Well Diameter: 4 Inches

Samplers: DORIAN MCAN Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: 7/17/13 15:45

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments

Sampling Data

Method: _____ Date/Time: 7/17/13 17:20 Total Volume of Water purged: 4.10

Field Parameters

HORRIBA		HACH TEST KITS	
pH	5.58	Alkalinity (g/g)	
Spec. Cond.(mS/cm)	2.79	Carbon Dioxide (mg/L)	
Turbidity (NTU)	990	Ferrous Iron (mg/L)	
DO (mg/L)	0.00	Manganese (mg/L)	X
Temp.(°C)	20.46	Hydrogen Sulfide (mg/L)	5
ORP (mv)	-212		
TDS (g/L)	1.79		

NOTE HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW3010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments could not run most HACH kit tests.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-4_071813 Well Diameter: 2 Inches

Samplers: C. Hug Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
6.20	Casing Volumes (gal/ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: LOW FLOW Date/Time: 7/18/13 1413

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1423	6.90	130	0.34	6.67	2.81	10.71	7.792	20.05	5.064	32.0	CLEAR
1433	~~6.99~~	130	0.68	6.69	1.80	10.42	7.684	20.44	4.995	8.4	
1443	7.87	130	1.02	6.65	1.50	8.44	7.729	19.77	5.033	-7.8	CLEAR
1453	7.91	130	1.36	6.64	1.39	8.13	7.762	19.53	5.045	-12.7	
1458	7.93	130	1.53	6.64	1.25	7.90	7.769	19.51	4.996	-13.4	
1503	7.94	130	1.7	6.61	1.17	7.86	7.773	19.84	4.891	-13.9	
1508	7.94	130	1.87	6.61	1.08	7.98	7.775	19.24	4.849	-14.7	
1513	7.94	130	2.04	6.61	0.99	7.43	7.779	19.10	4.842	-25.3	CLEAR
1518	7.95	130	2.21	6.61	0.91	7.00	7.752	18.90	4.834	-25.8	
1523	7.95	130	2.38	6.62	0.89	6.90	7.736	18.86	4.831	-26.1	
~~1528~~	7.43	130	2.55	6.62	0.73	6.22	7.706	18.25	4.811	-17.8	
~~1533~~	7.46	130	~~2.72~~ 2.89	6.62	0.89	5.12	7.689	18.14	4.813	-18.8	
~~1538~~	7.48	130	~~2.89~~ 3.06	6.62	0.88	5.09	7.679	18.10 18.06	4.800	-18.9	
1540	7.50	130	~~3.06~~ 3.01	6.62	0.87	5.10	7.674	~~1625~~	4.799	-19.4	

Sampling Data

Method: LOW FLOW Date/Time: 7/18/13 1540 /1625 CAH Total Volume of Water purged: 3.3

Field Parameters

HORRIBA	
pH	6.62
Spec. Cond.(mS/cm)	7.674
Turbidity (NTU)	5.10
DO (mg/L)	0.87
Temp.(°C)	18.06
ORP (mv)	-19.4
TDS (g/L)	4.799

HACH TEST KITS	
Alkalinity (g/g)	17 DROPS X 20 340
Carbon Dioxide (mg/L)	292
Ferrous Iron (mg/L)	2.4
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	0.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments: 1525 - STOP WORK (THUNDERSTORM)
1603 - BACK TO WORK. WELL WAS STABLE BEFORE STOPPING. RAN LONG ENOUGH ENOUGH TO GET PURGE VOLUME.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: MW-20D Well Diameter: 2 inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
8.30	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/18/13 1510

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: low flow Date/Time: 7/18/13 1630 Total Volume of Water purged: 3.4

Field Parameters

HORRIBA	
pH	6.50
Spec. Cond.(mS/cm)	1.75
Turbidity (NTU)	2.41
DO (mg/L)	0.0
Temp.(°C)	20.20
ORP (mv)	-313
TDS (g/L)	1.12

HACH TEST KITS	
Alkalinity (g/g)	22 X 20 440
Carbon Dioxide (mg/L)	110 x 2 220
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	>5

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments:

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility

Well ID: MW-11S

Well Diameter: 2 Inches

Samplers: D. Simons

Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
8.23	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Low flow

Date/Time: 7/18/13 1340

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments

Sampling Data

Method: Low flow

Date/Time: 7/18/13 1440

Total Volume of Water purged: 2.6

Field Parameters

HORRIBA	
pH	6.38
Spec. Cond.(mS/cm)	4.03
Turbidity (NTU)	5.79
DO (mg/L)	0.0
Temp.(°C)	20.15
ORP (mv)	-205
TDS (g/L)	2.58

HACH TEST KITS	
Alkalinity (g/g)	18 x 20 360
Carbon Dioxide (mg/L)	90 x 2 180
Ferrous Iron (mg/L)	0.9
Manganese (mg/L)	0.3
Hydrogen Sulfide (mg/L)	0.5

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
✓ Select VOCs	3-40mL glass vial		HCl	EPA 8260
✓ MEE	2-40mL glass vial		HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate		MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-13D_071813 Well Diameter: 4 Inches

Samplers: O. Hucy Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.61	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/18/13 0831

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
0841	7.62	240	0.63	6.38	8.60	977	4.326	16.01	2.811	152.4	BLACK
0851	7.62	240	1.26	6.39	1.37	792	4.325	16.27	2.814	40.9	
0856	7.64	240	1.58	6.38	1.06	728	4.298	16.25	2.794	34.1	
0901	7.65	240	1.89	6.35	0.22	719	4.257	16.23	2.766	-63.7	BLACK
0906	7.67	240	2.21	6.34	0.22	710	4.236	16.29	2.744	-116.7	
0911	7.69	240	2.52	6.34	0.21	708	4.212	16.32	2.739	-120.3	
0916	7.70	240	2.84	6.33	0.19	715	4.199	16.48	2.714	-117.1	BLACK
0921	7.71	240	3.15	6.31	0.18	729	4.183	16.52	2.701	-115.6	

Sampling Data

Field Parameters

Method: LOW FLOW Date/Time: 7/18/13 0925 Total Volume of Water purged: 3.75 gal.

HORRIBA		HACH TEST KITS	
pH	6.31	Alkalinity (g/g)	—
Spec. Cond.(mS/cm)	4.183	Carbon Dioxide (mg/L)	—
Turbidity (NTU)	729	Ferrous Iron (mg/L)	—
DO (mg/L)	0.18	Manganese (mg/L)	—
Temp.(°C)	16.52	Hydrogen Sulfide (mg/L)	0.0
ORP (mv)	-115.6		
TDS (g/L)	2.701		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: WATER NOT CLEARING UP - STILL BLACK

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-101 Well Diameter: 2 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)?

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
7.55 Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: low flow Date/Time: 7/18/13 0830

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: low flow Date/Time: 7/18/13 0945 Total Volume of Water purged: 3.8

Field Parameters

HORRIBA	
pH	7.89
Spec. Cond.(mS/cm)	1.76
Turbidity (NTU)	1.93
DO (mg/L)	0.0
Temp.(°C)	17.47
ORP (mv)	-281
TDS (g/L)	1.12

HACH TEST KITS	
Alkalinity (g/g)	15 x 20 300
Carbon Dioxide (mg/L)	75 x 2 150
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	2.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen Acetylene				

Comments

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-16D Well Diameter: 4 Inches

Samplers: DORIK UCAK Monitored Natural Attenuation Sample Set (Y/N)?

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: Date/Time: 7/18/13

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: Date/Time: 09:50 Total Volume of Water purged: 3.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.34	Alkalinity (g/g)	500
Spec. Cond.(mS/cm)	2.36	Carbon Dioxide (mg/L)	166
Turbidity (NTU)	3.55	Ferrous Iron (mg/L)	0.0
DO (mg/L)	0.02	Manganese (mg/L)	3.0
Temp.(°C)	22.14	Hydrogen Sulfide (mg/L)	5.0
ORP (mv)	1.5		
TDS (g/L)	1.51		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen/ Acetylene				

Comments: VoAs are effervescing

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-116-071807 Well Diameter: _____ Inches

Samplers: DPE Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: _____

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: 1100 Total Volume of Water purged: _____

Field Parameters

HORRIBA	
pH	
Spec. Cond.(mS/cm)	
Turbidity (NTU)	
DO (mg/L)	
Temp.(°C)	
ORP (mv)	
TDS (g/L)	

HACH TEST KITS	
Alkalinity (g/g)	520
Carbon Dioxide (mg/L)	410
Ferrous Iron (mg/L)	0.6
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	0.0

NOTE HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments _____

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: PMW-12D Well Diameter: 4 Inches

Samplers: C. HUEY Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.70 TD SUBSTRATE	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/18/13 1014

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1024	7.70	220	0.58	5.96	0.67	32.9	3.099	17.31	2.014	79.2	MOSTLY CLEAR
1034	*	220	1.16	6.18	0.38	15.3	3.826	17.10	2.486	68.7	
1044		220	1.74	6.22	0.27	14.9	3.955	17.02	2.514	47.3	FEW PARTICLES
1049		220	2.03	6.23	0.28	11.6	3.975	16.95	2.599	45.1	
1054	7.80	220	2.32	6.25	0.27	11.8	4.167	16.80	2.788	41.2	
1059		220	2.61	6.28	0.24	12.0	4.153	16.90	2.702	40.3	
1104	7.80	220	2.90	6.30	0.24	11.1	4.167	16.87	2.778	39.8	CLEAR
1109		220	3.19	6.31	0.23	10.8	4.196	16.83	2.805	39.4	

Sampling Data

Method: LOW FLOW Date/Time: 7/18/13 1110 Total Volume of Water purged: 3.75 gal.

Field Parameters

HORRIBA	
pH	6.31
Spec. Cond.(mS/cm)	4.196
Turbidity (NTU)	10.8
DO (mg/L)	0.23
Temp.(°C)	16.83
ORP (mv)	39.4
TDS (g/L)	2.805

HACH TEST KITS	
Alkalinity (g/g)	—
Carbon Dioxide (mg/L)	—
Ferrous Iron (mg/L)	—
Manganese (mg/L)	—
Hydrogen Sulfide (mg/L)	0.3

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen/ Acetylene				

Comments: * SUBSTRATE IN WELL - COULDN'T GET WATER LEVEL.
WAS EFFERVESCING. WATER TURNS BLACK AFTER ~1 MIN. (OXIDIZING)

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-12S Well Diameter: 2 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.63	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/18/13

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: low flow Date/Time: 7/18/13 1215 Total Volume of Water purged: 4

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.29	Alkalinity (g/g)	28 X 20 560
Spec. Cond.(mS/cm)	6.13	Carbon Dioxide (mg/L)	200 X 2 400
Turbidity (NTU)	8.25	Ferrous Iron (mg/L)	0.0
DO (mg/L)	0.0	Manganese (mg/L)	0.2
Temp.(°C)	20.95	Hydrogen Sulfide (mg/L)	4
ORP (mv)	-291		
TDS (g/L)	3.84		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: INJ-05 Well Diameter: 4 Inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

DTW - 8.50'

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.90 TO DNAPL	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW Date/Time: 7/18/13 1205

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1215	8.55	200	0.52	5.97	0.80	162	3537	19.24	2.299	8.0	BLACK PARTICLES
1225	8.55	200	1.04	5.97	0.27	787	3.543	18.44	2.300	-23.6	OXIDIZING
1235	8.58	200	1.56	5.96	0.26	799	3.635	18.23	2.363	-177.9	SAME
1240	8.60	200	1.82	6.03	0.29	801	3.676	18.29	2.388	-246.7	SAME
1245	8.60	200	2.08	6.08	0.33	810	3.704	18.12	2.404	-257.9	SAME
1250	8.60	200	2.34	6.12	0.36	786	3.756	17.65	2.418	-275.3	SAME
1255	8.60	200	2.6	6.17	0.42	800	3.765	17.87	2.450	-292.8	"
1300	8.60	200	2.86	6.22	0.43	790	3.859	18.24	2.510	-292.0	"
1305	8.60	200	3.12	6.23	0.41	805	3.876	18.16	2.520	-293.8	"
1310	8.60	200	3.38	6.24	0.40	812	3.880	18.16	2.526	-293.9	"

Sampling Data

Method: LOW FLOW Date/Time: 7/18/13 1315 Total Volume of Water purged: 4.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.24	Alkalinity (g/g)	—
Spec. Cond.(mS/cm)	3.880	Carbon Dioxide (mg/L)	—
Turbidity (NTU)	812	Ferrous Iron (mg/L)	—
DO (mg/L)	0.40	Manganese (mg/L)	—
Temp.(°C)	18.16	Hydrogen Sulfide (mg/L)	5.0
ORP (mv)	-293.9		
TDS (g/L)	2.520		

NOTE HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120mL glass amber		None	SW9060
Microbial Census				
Hydrogen/ Acetylene				

Comments: DTW @ (7.90' TO DNAPL) DTW @ 8.5'
WATER OXIDIZING IMMEDIATELY - TURNING BLACK

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-4S Well Diameter: ______ Inches

Samplers: Dorak Wade Monitored Natural Attenuation Sample Set (Y/N)? ______

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: ______ Date/Time: ______

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments

Sampling Data

Method: ______ Date/Time: 7/18/13 1650 Total Volume of Water purged: ______

Field Parameters

HORRIBA	
pH	6.87
Spec. Cond.(mS/cm)	5.14
Turbidity (NTU)	NA
DO (mg/L)	0.00
Temp.(°C)	29.59
ORP (mv)	-287
TDS (g/L)	3.24

HACH TEST KITS	
Alkalinity (g/g)	322
Carbon Dioxide (mg/L)	420
Ferrous Iron (mg/L)	3.4
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	2.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: TURBIDITY VARIED BETWEEN 0.03 NTU & ~35 NTU

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: INJ-04 071813 Well Diameter: 4 Inches

Samplers: DPC Monitored Natural Attenuation Sample Set (Y/N)?

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: low flow - [illegible] Date/Time: 7/18/13 1210

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1210	7.60	200	0	5.87	7.73	OR	3.17	28.30	2.03	-445	[illegible]
1220	8.55	200	0.5	5.88	0.11	-31	3.35	22.94	2.14	-334	Gray strong odor
1230	8.65	200	1.0	5.84	0.02	-31	3.38	23.28	2.16	-354	Same
1235	8.75	200	1.3	5.84	0.0	624	3.52	22.51	2.25	-403	Same
1240	8.73	200	1.5	5.87	0.0	997	3.66	22.87	2.35	-414	Same
1245	8.70	200	1.8	5.86	0.0	750	3.72	22.65	2.38	-427	Same
1250	8.70	200	2.0	5.90	0.0	905	3.97	22.61	2.57	-442	turning black, strong odor
1255	8.70	200	2.3	5.94	0.0	754	3.98	22.84	2.57	-450	
1300	8.70	200	2.6	6.2	0.00	660	4.07	23.25	2.60	-462	
1305	8.71	200	2.9	6.06	0.00	661	4.08	23.55	2.60	-465	
1310	8.71	200	3.2	6.06	0.00	663	4.10	23.43	2.61	-465	
1315	8.71	200	3.49	6.07	0.00	662	4.10	23.62	2.61	-465	
1320	8.70	200	3.80	6.08	0.00		4.18	23.90	2.68	-470	

Sampling Data

Method: dedicated Tubing Date/Time: 7/18/13 1325 Total Volume of Water purged: 3.80 gal

Field Parameters

HORRIBA	
pH	6.08
Spec. Cond.(mS/cm)	4.18
Turbidity (NTU)	662
DO (mg/L)	0.00
Temp.(°C)	23.90
ORP (mv)	-470
TDS (g/L)	2.68

HACH TEST KITS	
Alkalinity (g/g)	
Carbon Dioxide (mg/L)	
Ferrous Iron (mg/L)	
Manganese (mg/L)	
Hydrogen Sulfide (mg/L)	75

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	1-40mL amber glass vial	H3PO4	SW9060
~~Total Inorganic Carbon~~	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: collected sample INJ-04 071813
could not run most HACH kit tests.
water is black. VOAs are effervescing.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-18D Well Diameter: 2 Inches

Samplers: DORUK UCAK Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: 7/19/13 11:15

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: 7/19/13 12:20 Total Volume of Water purged: 3.3

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.63	Alkalinity (g/g)	260
Spec. Cond.(mS/cm)	2.03	Carbon Dioxide (mg/L)	184
Turbidity (NTU)	6.93	Ferrous Iron (mg/L)	0.0
DO (mg/L)	0.00	Manganese (mg/L)	0.0
Temp.(°C)	26.77	Hydrogen Sulfide (mg/L)	2.0
ORP (mv)	-253		
TDS (g/L)	7.31		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: _____

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: RMW-3D Well Diameter: 2 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.85	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: 0925

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: low flow Date/Time: 7/19/13 1025 Total Volume of Water purged: 4.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.99	Alkalinity (g/g)	20 x 20 400
Spec. Cond.(mS/cm)	1.74	Carbon Dioxide (mg/L)	80 x 2 160
Turbidity (NTU)	2.22	Ferrous Iron (mg/L)	0.0
DO (mg/L)	0.0	Manganese (mg/L)	0.0
Temp.(°C)	18.86	Hydrogen Sulfide (mg/L)	3
ORP (mv)	-316		
TDS (g/L)	1.12		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: Cleaned debris out of flow cell due to errant DO.

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: PMW-8D 071913 Well Diameter: 2 Inches

Samplers: C. Huey Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
7.55	Casing Volumes (gal/ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: LOW FLOW Date/Time: 7/19/13 0959

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
1009	8.43	150	0.39	6.94	1.83	308	4.561	17.74	2.965	-244.7	CLEAR THEN
1019	8.41	150	0.78	6.84	1.13	563	4.895	18.00	3.182	-278.1	TURNS BLACK
1029	8.42	150	1.17	6.80	1.08	5.91	4.925	18.17	3.200	-277.8	
1039	8.43	150	1.56	6.73	0.50	6.12	4.931	18.06	3.204	-276.2	
1044	8.44	150	1.75	6.69	0.42	6.86	4.919	18.79	3.198	-282.2	
1049	8.44	150	1.95	6.68	0.44	6.09	4.949	18.65	3.217	-287.9	
1054	8.45	150	2.14	6.66	0.37	6.56	4.941	18.77	3.211	-286.0	SAME
1059	8.45	150	2.34	6.66	0.38	7.43	4.945	18.88	3.214	-284.8	
1104	8.46	150	2.53	6.65	0.38	8.10	4.947	18.91	3.215	-285.0	
1109	8.46	150	2.73	6.65	0.38	7.96	4.950	18.87	3.218	-284.7	
1114	8.45	150	2.92	6.65	0.37	7.54	4.938	19.02	3.210	-284.3	SAME

Sampling Data

Method: LOW FLOW Date/Time: 7/19/13 1115 Total Volume of Water purged: 3.75

Field Parameters

HORRIBA	
pH	6.65
Spec. Cond.(mS/cm)	4.938
Turbidity (NTU)	7.54
DO (mg/L)	0.37
Temp.(°C)	19.02
ORP (mv)	-284.3
TDS (g/L)	3.210

HACH TEST KITS	
Alkalinity (g/g)	40 DROPS X20 800
Carbon Dioxide (mg/L)	444
Ferrous Iron (mg/L)	0.0
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	5.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen, Acetylene				

Comments: VOAs EFFERVESCING.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility* Well ID: MW-65 Well Diameter: 2 Inches

Samplers: DORIK UCAK Monitored Natural Attenuation Sample Set (Y/N)? _____

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
Casing Volumes (gal/ft.):				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: _____ Date/Time: 7/19/13 08:00

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: 7/19/13 10:05 Total Volume of Water purged: 4.50

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.45	Alkalinity (g/g)	360
Spec. Cond.(mS/cm)		Carbon Dioxide (mg/L)	280
Turbidity (NTU)		Ferrous Iron (mg/L)	0.0
DO (mg/L)	0.00	Manganese (mg/L)	0.7
Temp.(°C)		Hydrogen Sulfide (mg/L)	0.1
ORP (mv)			
TDS (g/L)			

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Choride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: _____

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Ekonol Facility*

Samplers: C. HUBY

Well ID: ~~[illegible]~~ OR-15SM_071913

Well Diameter: 2 Inches

Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
6.42	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: LOW FLOW

Date/Time: 7/19/13 0751

Time 24 hr.	DTW ft.	Pump Rate ml/min.	Vol. gal.	pH	DO mg/L	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	TDS g/L	ORP mv	Comments
0801	6.61	125	0.33	6.50	2.44	10.6	4.876	19.79	3.167	140.3	YELLOW COLOR
0811	6.63	~~125~~ 140	~~0.66~~ 0.78	6.52	0.72	14.1	4.847	18.62	3.150	47.0	
0821	6.67	~~125~~ 140	~~0.99~~ 1.07	6.54	0.64	18.8	4.818	18.76	3.133	35.3	
0831	6.69	~~125~~ 140	~~1.32~~ 1.44	6.55	0.76	26.3	4.796	18.83	3.114	25.8	
0836	6.71	~~125~~ 140	~~1.49~~ 1.62	6.54	0.76	24.8	4.798	18.62	3.119	18.5	YELLOWISH
0841	6.72	~~125~~ 140	~~1.65~~ 1.81	6.54	0.70	23.6	4.786	18.72	3.111	13.6	
0846	6.73	~~125~~ 140	1.99	6.53	0.69	24.9	4.775	18.67	3.103	8.5	
0851	6.74	140	2.18	6.51	0.68	25.6	4.766	18.70	3.096	4.6	
0856	6.74	140	2.36	6.50	0.68	25.1	4.760	18.72	3.094	3.5	
0901	6.75	140	2.55	6.53	0.67	25.6	4.760	18.62	3.094	2.4	
0906	6.76	140	2.73	6.54	0.66	24.2	4.762	18.70	3.095	2.1	

Sampling Data

Method: LOW FLOW

Date/Time: 7/19/13 0910

Total Volume of Water purged: 3.5

Field Parameters

HORRIBA	
pH	6.54
Spec. Cond.(mS/cm)	4.762
Turbidity (NTU)	24.2
DO (mg/L)	0.66
Temp.(°C)	18.70
ORP (mv)	2.1
TDS (g/L)	3.095

HACH TEST KITS	
Alkalinity (g/g)	97 DROPS x 20 1940
Carbon Dioxide (mg/L)	224
Ferrous Iron (mg/L)	1.8
Manganese (mg/L)	0.3
Hydrogen Sulfide (mg/L)	8.0

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs (circled)	3-40mL glass vial	HCl	EPA 8260
MEE (circled)	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate (circled)	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics (circled)	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate (circled)	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide (circled)	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon (circled)	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon (circled)	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: VOAS EFFERVESCING

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: MW-21D Well Diameter: 4 inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
8.11	Casing Volumes (gal/ft.):		
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4

Method: low flow Date/Time: 7/19/13 0800

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: low flow Date/Time: 7/19/13 0830 Total Volume of Water purged: 3.33

Field Parameters

HORRIBA	
pH	8.49
Spec. Cond.(mS/cm)	1.08
Turbidity (NTU)	5.14
DO (mg/L)	4.98
Temp.(°C)	16.72
ORP (mv)	-180
TDS (g/L)	0.700

HACH TEST KITS	
Alkalinity (g/g)	14 x 20 = 280
Carbon Dioxide (mg/L)	40 x 2 = 80
Ferrous Iron (mg/L)	1.5
Manganese (mg/L)	0.0
Hydrogen Sulfide (mg/L)	0.1

NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET				
Parameter	Bottle		Pres.	Method
Select VOCs	3-40mL glass vial		HCl	EPA 8260
MEE	2-40mL glass vial		HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)		None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)		HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)		None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)		NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial		H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber		None	SW9060
Microbial Census				
Hydrogen Acetylene				

Comments:

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Ekonol Facility Well ID: MW-9S Well Diameter: 2 Inches

Samplers: Bill Simons Monitored Natural Attenuation Sample Set (Y/N)? Y

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot				
7.74	Casing Volumes (gal/ft.):			
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Method: low flow Date/Time: 7/19/13

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	

Sampling Data

Method: _____ Date/Time: 7/19/13 1230 Total Volume of Water purged: 3.6

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.48	Alkalinity (g/g)	15 X 20 300
Spec. Cond.(mS/cm)	5.13	Carbon Dioxide (mg/L)	250 X 2 500
Turbidity (NTU)	11.7	Ferrous Iron (mg/L)	1.0
DO (mg/L)	0.0	Manganese (mg/L)	0.2
Temp.(°C)	18.81	Hydrogen Sulfide (mg/L)	4
ORP (mv)	-283		
TDS (g/L)	3.23		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	Bottle	Pres.	Method
Select VOCs	3-40mL glass vial	HCl	EPA 8260
MEE	2-40mL glass vial	HCl	Lab SOP
Chloride / Nitrate / Sulfate	2-40mL glass vial (Field filtered)	None	lab specified
Dissolved Inorganics	1-250mL plastic (Field filtered)	HNO3	SW6010B
Ortho-Phosphate	1-250mL plastic (Field filtered)	None	EPA 365.1
Sulfide	1-250mL glass (Field filtered)	NaOH/Zn Acetate	MS-4500-S2-F
Total Organic Carbon	2-40mL amber glass vial	H3PO4	SW9060
Total Inorganic Carbon	1-120 mL glass amber	None	SW9060
Microbial Census			
Hydrogen, Acetylene			

Comments: _____

PARSONS

ATTACHMENT C

DATA USABILITY REPORT

DATA USABILITY SUMMARY REPORT

EKONOL FACILITY

Prepared For:

Atlantic Richfield Company

4850 East 49th Street
MBC 3-147
Cuyahoga Heights, Ohio 44125

Prepared By:

PARSONS

40 La Riviere Drive, Suite 350
Buffalo, New York 14202
(716) 541-0730

AUGUST 2013

TABLE OF CONTENTS

Page

LIST OF ATTACHMENTS

SECTION 1

DATA USABILITY SUMMARY

Groundwater samples were collected for the 2013 2nd Quarter Monitoring from the Ekonol Facility site in Wheatfield, New York from July 9, 2013 through July 19, 2013. Analytical results from these samples were reviewed by Parsons for usability with respect to the following requirements:

- Work Plan,
- NYSDEC Analytical Services Protocol (ASP), and
- USEPA Region II Standard Operating Procedures (SOPs).

The analytical laboratories for this project were Eurofins Laboratories, Inc. (Eurofins), Microseeps, Inc. (Microseeps), and Microbial Insights (MI). LLI is approved to conduct project analyses through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

1.1 LABORATORY DATA PACKAGES

The laboratory data package turnaround time, defined as the time from sample receipt by the laboratory to receipt of the analytical data packages by Parsons, was 21-28 days for the Ekonol samples. Comments on specific quality control (QC) and other requirements are discussed in detail in the attached data validation report.

1.2 SAMPLING AND CHAIN-OF-CUSTODY

The samples were collected, shipped under a COC record, and received at the laboratory within one to two days of sampling. All samples were received intact and in good condition at the laboratories.

1.3 LABORATORY ANALYTICAL METHODS

The groundwater samples collected from the Ekonol site were analyzed for certain volatile organic compounds (VOCs) including methane, ethane, and ethene; metals; chloride; nitrate; orthophosphate; sulfate; sulfide; total organic carbon (TOC); total inorganic carbon (TIC); total carbon; hydrogen; acetylene; and/or dechlorinating bacteria and functional genes. Summaries of issues concerning these laboratory analyses are presented in Subsections 1.3.1 through 1.3.3. The data qualifications resulting from the data review and statements on the laboratory analytical precision, accuracy, representativeness, completeness, and comparability (PARCC) are discussed for each analytical method in Section 2. The laboratory data were reviewed and may be qualified with the following validation flags:

"U" - not detected at the value given,

"UJ" - estimated and not detected at the value given,

"J" - estimated at the value given,

"N" - presumptive evidence at the value given, and

"R" - unusable value.

The validated laboratory data were tabulated and are presented in Attachment A.

1.3.1 Volatile Organic Analysis Including Methane, Ethane, and Ethene

The groundwater samples collected from the Ekonol site were analyzed for certain VOCs using the USEPA SW-846 8260B analytical method. In addition, certain groundwater samples were analyzed for methane, ethane, and ethene using the modified USEPA approved RSK-175 analytical method. Certain reported results for these samples were considered estimated based upon instrument calibrations, laboratory control sample recoveries, and matrix spike/matrix spike duplicate (MS/MSD) precision and accuracy. The reported VOC and methane, ethane, and ethene analytical results were 100% complete (i.e., usable) based upon the groundwater data presented by Eurofins. PARCC requirements were met.

1.3.2 Metals Analysis

Certain groundwater samples collected from the Ekonol site were analyzed for dissolved metals using the USEPA SW-846 6010B analytical method. Certain reported results for the metals samples were considered estimated based upon instrument calibrations and matrix spike recoveries. The reported metals analytical results were 100% complete (i.e., usable) based upon the groundwater data presented by Eurofins. PARCC requirements were met.

1.3.3 Other Parameters

The groundwater samples collected from the Ekonol site were analyzed for chloride, nitrate, and sulfate using the USEPA 300.0 analytical method; sulfide using the SM20 4500 analytical method; orthophosphate using the USEPA 365.3; TOC, TIC, and total carbon using the SM20 5310C analytical method; hydrogen and acetylene using the Microseeps SOP AM20GAX; and/or dechlorinating bacteria and functional genes using the MI SOP. Custody documentation, holding times, laboratory blanks, matrix spike/matrix spike duplicate, laboratory duplicate precision, laboratory control samples, instrument calibrations, quantitation limits, sample result identification, and field duplicate precision were reviewed for compliance. The reported results for these samples did not require qualification resulting from data validation with the exception of the following:

- The positive chloride results associated with samples collected on 7/11/13 were considered estimated, possibly biased low, and qualified “J” based upon a low matrix spike recovery for chloride (86%R; QC limit 90-110%R);

- The positive total carbon results associated with samples collected on 7/15/13 were considered estimated, possibly biased low, and qualified “J” based upon a low matrix spike recovery for total carbon (71%R; QC limit 72-132%R); and

- The nondetected nitrate results for samples PMW-7D, MW-13D, and MW-14D were considered estimated, possibly biased low, and qualified "UJ" based upon an exceedance of the 48-hour holding time by two to three days.

The reported analytical results for these parameters were 100% complete (i.e., usable) based upon the groundwater data presented by Eurofins, Microseeps, and MI. PARCC requirements were met.

SECTION 2

DATA VALIDATION REPORT

2.1 2ND QUARTER MONITORING EVENT

Data review has been completed for data packages generated by Eurofins containing groundwater samples collected from the Ekonol Facility site during the 2nd Quarter Monitoring event. All of these samples were shipped under a COC record and received intact by the analytical laboratory. Analytical results from the project samples were submitted by Eurofins within the following sample delivery groups (SDGs): BPW58, BPW59, BPW60, BPW61, BPW62, BPW63, BPW64, BPW65, and BPW66. Data validation was performed for all samples in accordance with the most current editions of the USEPA Region II SOPs and the NYSDEC ASP for organic and inorganic data review. This data validation and usability report is presented by analysis type. The validated laboratory data are tabulated and presented in Attachment A.

2.1.1 Volatiles Including Methane, Ethane, and Ethene (MEE)

The following items were reviewed for compliancy in the volatile analysis:

- Custody documentation
- Holding times
- Surrogate recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) precision and accuracy
- Laboratory control sample (LCS) recoveries
- Laboratory method blank and trip blank contamination
- Instrument performance
- Initial and continuing calibrations
- Internal standard responses
- Field duplicate precision
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of MS/MSD precision and accuracy, LCS recoveries, and continuing calibrations as discussed below.

MS/MSD Precision and Accuracy

All MS/MSD precision (relative percent difference; RPD) and accuracy (percent recovery; %R) measurements were considered acceptable and within QC limits for designated spiked project samples with the exception of the high MS/MSD accuracy results for ethane (159%R/153%R; QC limit 32-129%R) and ethene (203%R/197%R; QC limit 35-162%R) during the spiked analyses of sample OR-3SM; the low MS/MSD accuracy results for vinyl chloride (34%R/58%R; QC limit 66-133%R) during the spiked analyses of sample PMW-3S; the high MS accuracy result for ethene (187%R; QC limit 35-162%R) during the spiked analyses of sample INJ-13D; the high MS accuracy results for 1,1,1-trichloroethane (149%R; QC limit 69-140%R) and tetrachloroethene (130%R; QC limit 80-128%R) during the spiked analyses of sample PMW-9S; and the high MS/MSD accuracy results for ethene (211%R/225%R; QC limit 35-162%R) during the spiked analyses of OR-10SM. Positive results for those compounds where both the MS and MSD accuracy results exceeded the QC limit were considered estimated, possibly biased high, and qualified "J" for the parent sample. Results for those compounds where both the MS and MSD accuracy results fell below the QC limit were considered estimated, possibly biased low, with positive results qualified "J" and nondetected results qualified "UJ" for the parent sample.

LCS Recoveries

All LCS recoveries were considered acceptable and within QC limits with the exception of the high LCS recoveries for 1,1,1-trichloroethane (128%R, 140%R; QC limit 66-126%R) associated with samples collected on 7/16/13 except OR-14SM and PMW-6D. Therefore, the positive 1,1,1-trichloroethane results associated with these samples were considered estimated, possibly biased high, and qualified "J".

Continuing Calibrations

All continuing calibration compounds had relative response factors (RRFs) greater than 0.05 and maximum percent differences (%Ds) within ±20% with the exception of 1,1,1-trichloroethane (-24%D, 25%D, 32%D) in the continuing calibrations associated with all samples collected on 7/11/13 and 7/16/13 except MW-2S. Therefore, the 1,1,1-trichloroethane results were considered estimated with positive results qualified "J" and nondetected results qualified "UJ" for the affected samples.

Usability

All volatile groundwater sample results including methane, ethane, and ethene were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The volatile groundwater data

presented by Eurofins were 100% (i.e., usable). The validated volatile laboratory data are tabulated and presented in Attachment A.

It was also noted that many samples were diluted and reanalyzed due to the exceedance in instrument calibration ranges for cis-1,2-dichloroethene, 1,1-dichloroethane, trichloroethene, 1,1,1-trichloroethane, vinyl chloride, methane, and/or ethene. Therefore, the diluted result for these compounds was reported for these samples in the validated laboratory data table in Attachment A.

2.1.2 Dissolved Metals

The following items were reviewed for compliancy in the metals analysis:

- Custody documentation
- Holding times
- Initial and continuing calibration, and preparation blank contamination
- Initial and continuing calibration verifications
- Interference check sample recoveries
- Matrix spike recoveries
- Laboratory duplicate precision
- Field duplicate precision
- Laboratory control sample recoveries
- Serial dilutions
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of instrument calibrations, blank contamination, and matrix spike recoveries as discussed below.

Instrument Calibrations

All initial and continuing calibration verifications were analyzed at the appropriate frequency with recoveries within QC limits. All instrument calibration reference standards were analyzed at the appropriate frequency with recoveries within the 50-150%R QC limit with the exception of the high standard recovery for dissolved manganese (157.2%R) associated with samples collected on 7/9/13. Positive dissolved manganese results were considered estimated, possibly biased high, and qualified "J" for the associated samples.

Blank Contamination

The continuing calibration blank associated with samples collected on 7/11/13 contained dissolved calcium at a concentration of 231 µg/L. Validation qualification was not required since the project samples were not affected by the contamination in this blank.

Matrix Spike Recoveries

All matrix spike recoveries were considered acceptable and within the 75-125%R QC limit with the exception of the low matrix spike recoveries for dissolved selenium (62%R, 58%R, and 73%R) associated with samples collected on 7/11/13, 7/12/13, and 7/19/13. Therefore, the dissolved selenium results were considered estimated, possibly biased low, with positive results qualified "J" and nondetected results qualified "UJ" for the affected samples.

Usability

All metals sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The metals data presented by Eurofins were 100% complete (i.e., usable). The validated groundwater laboratory data are tabulated and presented in Attachment A.

ATTACHMENT A

VALIDATED LABORATORY DATA

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	INJ-01 INJ-01_071613 7129618 LANCASTERLABS BPW63 WATER 7/16/2013 10:10 8/22/2013	INJ-02 INJ-02_071113 7125992 LANCASTERLABS BPW60 WATER 7/11/2013 10:30 8/22/2013	INJ-04 INJ-04_071813 7132177 LANCASTERLABS BPW65 WATER 7/18/2013 13:25 8/22/2013	INJ-05 INJ-05_071813 7132176 LANCASTERLABS BPW65 WATER 7/18/2013 13:15 8/22/2013	INJ-7D INJ-7D_071013 025KG-4 LANCASTERLABS/MI/MS 025KG Water 7/10/2013 8/22/2013	INJ-8D INJ-8D_071213 7126425 LANCASTERLABS BPW61 WATER 7/12/2013 9:45 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	80 UJ	80 UJ	80 U	160 U	120 J	40 J
75-34-3	1,1-DICHLOROETHANE	ug/l	120 J	100 U	150 J	200 U	100 U	320
75-35-4	1,1-DICHLOROETHENE	ug/l	91 J	180 J	86 J	160 U	870	8 U
75-00-3	CHLOROETHANE	ug/l	100 U	100 U	100 U	200 U	100 U	10 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	120000	140000	120000	99000	380000	3500
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	87 J	80 U	80 U	230 J	1600	8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	150 J	230 J	110 J	160 U	240 J	16 J
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	4100	6200	950	29000	360000	10 U
75-01-4	VINYL CHLORIDE	ug/l	3900	2400	2700	1800	3800	9400
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	370	490	760	160	290	450
74-84-0	ETHANE	ug/l	18	45	29	20	22	23
74-82-8	METHANE	ug/l	1600	1200	1900	3000	370	20000
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U
7440-38-2	ARSENIC	mg/l	0.0068 U	0.0098 J	0.0068 U	0.0092 J	0.008 J	0.0068 U
7440-70-2	CALCIUM	mg/l	367	263	355	340	443	299
7439-89-6	IRON	mg/l	20.5	241	5.78	0.582	44.3	132
7439-95-4	MAGNESIUM	mg/l	194	128	209	217	125	95.5
7439-96-5	MANGANESE	mg/l	1.2	1.64	0.902	0.502	1.03	1.29
9/7/7440	POTASSIUM	mg/l	8.22	7.38	10.4	7.7	6.5	43.1
7782-49-2	SELENIUM	mg/l	0.0084 U	0.0084 UJ	0.0084 U	0.0084 U	0.0084 U	0.0084 UJ
7440-23-5	SODIUM	mg/l	270	213	387	256	266	151
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	947				904	631
TOC	TOTAL ORGANIC CARBON	mg/l	780	1040	709	477	703	509
TIC	TOTAL INORGANIC CARBON	mg/l	167				200	122
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	460	364 J	523	367	554	210
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.53 J	0.03 U	0.6 U	0.6 U	0.11	0.03 U
14808-79-8	SULFATE (AS SO4)	mg/l	202	5 J	62.3	205	327	1.5 U
18496-25-8	SULFIDE	mg/l	61.8	5.5	140	210	0.47	0.069 J
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL					46200	
DHBt	DHBt	cells/mL					23800	
DHC	DHC	cells/mL					48000	
TCE	TCE	cells/mL					37600	
VCR	VCR	cells/mL					448	
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l					82	
1333-74-0	Hydrogen	nM					1100	

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	INJ-09D INJ-09D_071113 025KG-11 LANCASTERLABS/MI/MS 025KG Water 7/11/2013 8/22/2013	INJ-10D INJ-10D_071513 025KG-15 LANCASTERLABS/MI/MS 025KG Water 7/15/2013 8/22/2013	INJ-11D INJ-11D_071213 7126429 LANCASTERLABS BPW61 WATER 7/12/2013 11:40 8/22/2013	INJ-12D INJ-12D_071513 7127980 LANCASTERLABS BPW62 WATER 7/15/2013 16:20 8/22/2013	INJ-12D INJ-12D_071613 7129619 LANCASTERLABS BPW63 WATER 7/16/2013 11:55 8/22/2013	INJ-13D INJ-13D_071513 7127976 LANCASTERLABS BPW62 WATER 7/15/2013 12:30 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	150 J	760	160 U	160 U		80 U
75-34-3	1,1-DICHLOROETHANE	ug/l	210 J	400	200 U	200 U		100 U
75-35-4	1,1-DICHLOROETHENE	ug/l	140 J	18 J	320 J	160 U		130 J
75-00-3	CHLOROETHANE	ug/l	100 U	10 U	200 U	200 U		100 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	120000	4500	180000	130000		120000
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	80 U	8 U	310 J	320 J		290 J
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	110 J	11 J	180 J	160 U		140 J
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	3700	18 J	40000	31000		33000
75-01-4	VINYL CHLORIDE	ug/l	13000	1100	3500	2800		2300
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	680	890	440	1200		1400
74-84-0	ETHANE	ug/l	27	24	70	63		69
74-82-8	METHANE	ug/l	3600	6100	2500	4400		5100
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U		0.0828 U
7440-38-2	ARSENIC	mg/l	0.013 J	0.0074 J	0.0068 U	0.0068 U		0.0068 U
7440-70-2	CALCIUM	mg/l	463	419	303	445		485
7439-89-6	IRON	mg/l	67.1	36.3	0.0838 J	17.6		2.13
7439-95-4	MAGNESIUM	mg/l	79.1	67.2	207	109		112
7439-96-5	MANGANESE	mg/l	1.46	0.774	0.397	0.842		0.613
9/7/7440	POTASSIUM	mg/l	6.97	11.1	10.3	8.13		8.71
7782-49-2	SELENIUM	mg/l	0.0084 UJ	0.0084 U	0.0084 UJ	0.0084 U		0.0084 U
7440-23-5	SODIUM	mg/l	192	650	295	217		249
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	794	700 J	463	817 J		723 J
TOC	TOTAL ORGANIC CARBON	mg/l	679	553	265	658		608
TIC	TOTAL INORGANIC CARBON	mg/l	115	147	199	159		115
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	384 J	1180	528	446		524
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.04 J	0.2	0.6 U		0.64	1.3
14808-79-8	SULFATE (AS SO4)	mg/l	31.9	71	334	92.3		135
18496-25-8	SULFIDE	mg/l	5.1	70.5	183	9.7		79.7
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL	286000	37500				
DHBt	DHBt	cells/mL	2610	24200				
DHC	DHC	cells/mL	434000	652000				
TCE	TCE	cells/mL	199000	259000				
VCR	VCR	cells/mL	3070	13600				
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l	2.3	0.5 U				
1333-74-0	Hydrogen	nM	12	10				

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW-1S MW-1S_071613 7129624 LANCASTERLABS BPW63 WATER 7/16/2013 13:10 8/22/2013	MW-2S MW-2S_071113 025KG-12 LANCASTERLABS/MI 025KG Water 7/11/2013 8/22/2013	MW-3S MW-3S_07/17/2013 7131106 LANCASTERLABS BPW64 WATER 7/17/2013 13:00 8/22/2013	MW-4S MW-4S_071813 7132178 LANCASTERLABS BPW65 WATER 7/18/2013 16:50 8/22/2013	MW-5S MW-5S_071613 7129627 LANCASTERLABS BPW63 WATER 7/16/2013 15:25 8/22/2013	MW-6S MW-6S_071913 7133346 LANCASTERLABS BPW66 WATER 7/19/2013 10:05 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 UJ	80 U	0.8 U	1.3 J	0.8 UJ	1.1 J
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	100 U	1 U	2 J	1 U	5.3
75-35-4	1,1-DICHLOROETHENE	ug/l	1.7 J	530	0.8 U	1.4 J	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	100 U	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	170	220000	0.8 U	530	1.7 J	97
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	80 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	7.1	1600	0.8 U	12	0.8 U	0.9 J
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	14	1400	1 U	10	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	12	18000	1 U	470	27	230
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	1 U	130	1.5 J	89	1 U	4.6 J
74-84-0	ETHANE	ug/l	1 U	18	2.8 J	11	1.3 J	27
74-82-8	METHANE	ug/l	25	300	150	1300	21	140
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U	
7440-38-2	ARSENIC	mg/l	0.0068 U	0.0068 U	0.0068 U	0.0075 J	0.0068 U	
7440-70-2	CALCIUM	mg/l	289	427	200	452	256	
7439-89-6	IRON	mg/l	0.703	1.16	0.768	0.414	0.639	
7439-95-4	MAGNESIUM	mg/l	365	244	99.2	723	138	
7439-96-5	MANGANESE	mg/l	0.372	1.97	0.299	0.751	0.164	
9/7/7440	POTASSIUM	mg/l	3.67	2.88	28.1	7.05	2.48	
7782-49-2	SELENIUM	mg/l	0.0084 U	0.0084 UJ	0.0084 U	0.0084 U	0.0084 U	
7440-23-5	SODIUM	mg/l	71	363	4380	260	95.5	
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	69.2	134	75	156		
TOC	TOTAL ORGANIC CARBON	mg/l	1.3	4.3	8.4	5.1	2.1	
TIC	TOTAL INORGANIC CARBON	mg/l	68	129	66.6	151		
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	54.4	951 J	7180	221	177	
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.03 U	0.062 J	0.03 U	0.03 U	0.03 U	
14808-79-8	SULFATE (AS SO4)	mg/l	2000	1130	342	3420	877	
18496-25-8	SULFIDE	mg/l	0.054 U	0.054 U	0.054 U	14.1	0.054 U	
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL		7490				
DHBt	DHBt	cells/mL		31				
DHC	DHC	cells/mL		1730				
TCE	TCE	cells/mL		15				
VCR	VCR	cells/mL		0.9				
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l						
1333-74-0	Hydrogen	nM						

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW-7D MW-7D_07/17/2013 7131112 LANCASTERLABS BPW64 WATER 7/17/2013 15:40 8/22/2013	MW-7S MW-7S_07/17/2013 7131104 LANCASTERLABS BPW64 WATER 7/17/2013 8:30 8/22/2013	MW-8S MW-8S_07/17/2013 7131111 LANCASTERLABS BPW64 WATER 7/17/2013 15:00 8/22/2013	MW-9S MW-9S_071913 7133349 LANCASTERLABS BPW66 WATER 7/19/2013 12:30 8/22/2013	MW-10D MW-10D_071813 7132171 LANCASTERLABS BPW65 WATER 7/18/2013 9:45 8/22/2013	MW-10S MW-10S_071213 7126433 LANCASTERLABS BPW61 WATER 7/12/2013 14:45 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	900	0.8 U	0.8 U	0.8 U	140	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	1100	1 U	1 U	3.6 J	21	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	80 U	0.8 U	0.8 U	0.8 U	8.9 J	0.8 U
75-00-3	CHLOROETHANE	ug/l	100 U	1 U	1 U	1 U	2 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	59000	0.95 J	0.87 J	480	1100	340
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	89 J	0.8 U	0.8 U	0.8 U	1.6 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	91 J	0.8 U	0.8 U	4.1 J	2.5 J	13
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1300	1 U	1 U	1 U	2.8 J	4.9 J
75-01-4	VINYL CHLORIDE	ug/l	1200	1 U	1 U	360	170	250
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	180	1 U	1 U	25	7.4	570
74-84-0	ETHANE	ug/l	17	1 U	1 U	1 U	11	9
74-82-8	METHANE	ug/l	3400	3 U	3 U	50	150	2700
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U	
7440-38-2	ARSENIC	mg/l	0.0068 U	0.0095 J	0.0086 J	0.0068 U	0.0068 U	
7440-70-2	CALCIUM	mg/l	305	831	457	420	282	
7439-89-6	IRON	mg/l	0.043 U	0.043 U	0.594	1.1	0.104 J	
7439-95-4	MAGNESIUM	mg/l	185	537	567	568	87	
7439-96-5	MANGANESE	mg/l	0.504	0.375	0.408	0.543	0.127	
9/7/7440	POTASSIUM	mg/l	7.82	5.83	6.45	4.85	3.52	
7782-49-2	SELENIUM	mg/l	0.0084 U	0.0084 U	0.0084 U	0.0084 UJ	0.0084 U	
7440-23-5	SODIUM	mg/l	216	290	559	189	71.9	
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	399			156	70.1	
TOC	TOTAL ORGANIC CARBON	mg/l	178	2.4	6.7	7.5	2.2	
TIC	TOTAL INORGANIC CARBON	mg/l	221			148	67.9	
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	417	1820	797	236	143	
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.6 U	0.03 U	0.03 U	0.058 J	0.03 U	
14808-79-8	SULFATE (AS SO4)	mg/l	37.9	1940	3270	2530	657	
18496-25-8	SULFIDE	mg/l	242	0.054 U	0.054 U	9	4.7	
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL						
DHBt	DHBt	cells/mL						
DHC	DHC	cells/mL						
TCE	TCE	cells/mL						
VCR	VCR	cells/mL						
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l						
1333-74-0	Hydrogen	nM						

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW-11D MW-11D_071113 7125999 LANCASTERLABS BPW60 WATER 7/11/2013 15:45 8/22/2013	MW-11S MW-11S_071813 7132179 LANCASTERLABS BPW65 WATER 7/18/2013 14:40 8/22/2013	MW-12D MW-12D_071513 7127979 LANCASTERLABS BPW62 WATER 7/15/2013 16:40 8/22/2013	MW-12S MW-12S_071813 7132175 LANCASTERLABS BPW65 WATER 7/18/2013 12:15 8/22/2013	MW-13D MW-13D_071213 7126430 LANCASTERLABS BPW61 WATER 7/12/2013 11:50 8/22/2013	MW-14D MW-14D_071213 7126432 LANCASTERLABS BPW61 WATER 7/12/2013 14:20 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	290 J	11	1.2 J	45	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	35	44	1 U	49	11	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	4.3 J	1.4 J	0.8 U	6.7 J	0.97 J	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1 U	5 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	99	150	3.5 J	2900	250	0.8 U
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	4 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	8.8	0.8 U	41	2 J	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	5.3	84	1 U	2700	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	69	75	1.5 J	510	170	1 U
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	2.3 J	80	1 U	320	32	1 U
74-84-0	ETHANE	ug/l	24	1.8 J	37	27	13	6.8
74-82-8	METHANE	ug/l	110	880	200	6200	370	35
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l			0.0828 U		0.0828 U	0.0828 U
7440-38-2	ARSENIC	mg/l			0.0068 U		0.0068 U	0.0068 U
7440-70-2	CALCIUM	mg/l			499		312	272
7439-89-6	IRON	mg/l			0.043 U		0.0543 J	0.043 U
7439-95-4	MAGNESIUM	mg/l			114		131	127
7439-96-5	MANGANESE	mg/l			0.0198		0.0484	0.24
9/7/7440	POTASSIUM	mg/l			3.07		3.12	3.02
7782-49-2	SELENIUM	mg/l			0.0084 U		0.0084 UJ	0.0084 UJ
7440-23-5	SODIUM	mg/l			48.3		98.4	82.1
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l						
TOC	TOTAL ORGANIC CARBON	mg/l			0.5 U		2.6	2
TIC	TOTAL INORGANIC CARBON	mg/l						
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l			104		209	110
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l			0.25 U		0.25 UJ	0.25 UJ
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l			1.5 U		0.03 U	0.03 U
14808-79-8	SULFATE (AS SO4)	mg/l			1500		936	948
18496-25-8	SULFIDE	mg/l			41.2		5	1.1
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL						
DHBt	DHBt	cells/mL						
DHC	DHC	cells/mL						
TCE	TCE	cells/mL						
VCR	VCR	cells/mL						
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l						
1333-74-0	Hydrogen	nM						

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW-15D MW-15D_070913 7122141 LANCASTERLABS BPW58 WATER 7/9/2013 14:30 8/22/2013	MW-16D MW-16D_071213 7126426 LANCASTERLABS BPW61 WATER 7/12/2013 9:25 8/22/2013	MW-17D MW-17D_071113 7126000 LANCASTERLABS BPW60 WATER 7/11/2013 16:25 8/22/2013	MW-18D MW-18D_071913 7133350 LANCASTERLABS BPW66 WATER 7/19/2013 12:20 8/22/2013	MW-19D MW-19D_070913 7122139 LANCASTERLABS BPW58 WATER 7/9/2013 10:20 8/22/2013	MW-20D MW-20D_071813 7132180 LANCASTERLABS BPW65 WATER 7/18/2013 16:30 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	37	0.98 J	130 J	0.8 U	0.8 U	4000
75-34-3	1,1-DICHLOROETHANE	ug/l	23	9.3	31	1 U	1 U	490
75-35-4	1,1-DICHLOROETHENE	ug/l	2.5 J	1.6 J	2.3 J	0.8 U	0.8 U	65
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1.3 J	1 U	1 U	5 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	290	250	47	0.8 U	19	2700
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	4.2 J
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	3.1 J	1.4 J	0.8 U	0.8 U	0.8 U	9.7 J
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1.9 J	1.2 J	2.6 J	1 U	1 U	37
75-01-4	VINYL CHLORIDE	ug/l	260	140	47	1 U	1 U	470
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	2.7 J	16	2.5 J	1 U	1 U	16
74-84-0	ETHANE	ug/l	1 U	8.1	3 J	1 U	1 U	1.6 J
74-82-8	METHANE	ug/l	17	150	55	44	20	170
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U		0.0828 U	0.0828 U	
7440-38-2	ARSENIC	mg/l	0.0068 U	0.0068 U		0.0073 J	0.0068 U	
7440-70-2	CALCIUM	mg/l	165	349		447	538	
7439-89-6	IRON	mg/l	0.332	0.213		0.043 U	2.36	
7439-95-4	MAGNESIUM	mg/l	86.9	135		167	615	
7439-96-5	MANGANESE	mg/l	0.0732 J	0.0599		0.103	0.113 J	
9/7/7440	POTASSIUM	mg/l	3.24	3.82		2.54	4.62	
7782-49-2	SELENIUM	mg/l	0.0084 U	0.0084 UJ		0.0084 UJ	0.0084 U	
7440-23-5	SODIUM	mg/l	63.8	104		63.5	141	
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l				84.7		
TOC	TOTAL ORGANIC CARBON	mg/l	3.1	2.8		4.7	9.2	
TIC	TOTAL INORGANIC CARBON	mg/l				80		
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	90	219		79.8	262	
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U		0.25 U	0.25 U	
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.03 U	0.03 U		0.03 U	0.035 J	
14808-79-8	SULFATE (AS SO4)	mg/l	511	974		1420	3130	
18496-25-8	SULFIDE	mg/l	1.7	1.9		5.1	0.054 U	
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL						
DHBt	DHBt	cells/mL						
DHC	DHC	cells/mL						
TCE	TCE	cells/mL						
VCR	VCR	cells/mL						
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l						
1333-74-0	Hydrogen	nM						

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW-21D MW-21D_071913 7133344 LANCASTERLABS BPW66 WATER 7/19/2013 8:30 8/22/2013	OR-3SM OR-3SM_070913 7122137 LANCASTERLABS BPW58 WATER 7/9/2013 9:40 8/22/2013	OR-4SM OR-4SM_070913 7122138 LANCASTERLABS BPW58 WATER 7/9/2013 9:40 8/22/2013	OR-5SM OR-5SM_071013 025KG-1 LANCASTERLABS/MI/MS 025KG Water 7/10/2013 8/22/2013	Dup of OR-5SM_071013 OR-5SM OR-105SM_071013 7123460 LANCASTERLABS BPW59 WATER 7/10/2013 12:01 8/22/2013	OR-6SM OR-6SM_071013 025KG-2 LANCASTERLABS/MI/MS 025KG Water 7/10/2013 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	160	8 U	8 U	0.8 U	0.8 U	2 U
75-34-3	1,1-DICHLOROETHANE	ug/l	29	10 U	10 U	1.4 J	1.4 J	14
75-35-4	1,1-DICHLOROETHENE	ug/l	8.1	8 U	8 U	0.8 U	0.8 U	6.7 J
75-00-3	CHLOROETHANE	ug/l	1 U	10 U	10 U	1.4 J	1.4 J	13
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	380	8 U	8 U	0.8 U	0.8 U	10000
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	8 U	8 U	0.8 U	0.8 U	2 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	3.3 J	8 U	8 U	0.8 U	0.8 U	330
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	2.8 J	10 U	10 U	1 U	1 U	9.3 J
75-01-4	VINYL CHLORIDE	ug/l	600	10 U	10 U	1.8 J	1.6 J	3100
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	12	1 U	1 U	9.5	10	670
74-84-0	ETHANE	ug/l	1 U	120 J	2.5 J	350	350	900
74-82-8	METHANE	ug/l	30	20000	12000	18000	15000	9000
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l		0.0943 J	0.0828 U	0.113 J	0.158 J	0.0828 U
7440-38-2	ARSENIC	mg/l		0.0092 J	0.0124 J	0.0181 J	0.0142 J	0.0284
7440-70-2	CALCIUM	mg/l		434	488	390	398	600
7439-89-6	IRON	mg/l		12.2	46.4	3.08	3.19	7.15
7439-95-4	MAGNESIUM	mg/l		121	121	87.4	88.7	225
7439-96-5	MANGANESE	mg/l		2.2 J	6.92 J	1.98	1.99	5.28
9/7/7440	POTASSIUM	mg/l		33.6	36.6	20.7	20.7	38.4
7782-49-2	SELENIUM	mg/l		0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U
7440-23-5	SODIUM	mg/l		855	111	840	782	337
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l		314	544	246		538
TOC	TOTAL ORGANIC CARBON	mg/l		40.1	52	20.1	20.6	85
TIC	TOTAL INORGANIC CARBON	mg/l		274	492	226		453
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l		1850	192	1750	1720	1050
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l		0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l		0.03 U	0.036 J	0.074 J		3.2
14808-79-8	SULFATE (AS SO4)	mg/l		13.7	5.2	3.3 J	3 J	90.2
18496-25-8	SULFIDE	mg/l		1.2	0.29	3.6		31.6
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL				1750		1440
DHBt	DHBt	cells/mL				136		184
DHC	DHC	cells/mL				18100		25100
TCE	TCE	cells/mL				2020		6950
VCR	VCR	cells/mL				3130		7390
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l				0.5 U		0.5 U
1333-74-0	Hydrogen	nM				2.6		2.5

				Dup of OR-9SM_07/17/2013				Dup of OR-14SM_071613
Ekonol Facility		Location ID:	OR-9SM	OR-9SM	OR-10SM	OR-13SM	OR-14SM	OR-14SM
Validated Groundwater Analytical Results		Sample ID:	OR-9SM_07/17/2013	OR-109SM_07/17/2013	OR-10SM_07/17/2013	OR-13SM_071513	OR-14SM_071613	OR-114SM_071613
Wheatfield, New York		Lab Sample Id:	7131101	7131102	7131108	025KG-14	025KG-18	7129626
2nd Quarter 2013 (July)		Source:	LANCASTERLABS	LANCASTERLABS	LANCASTERLABS	LANCASTERLABS/MI/MS	LANCASTERLABS/MI/MS	LANCASTERLABS
		SDG:	BPW64	BPW64	BPW64	025KG	025KG	BPW63
		Matrix:	WATER	WATER	WATER	Water	Water	WATER
		Sampled:	7/17/2013 11:50	7/17/2013 12:01	7/17/2013 14:25	7/15/2013	7/16/2013	7/16/2013 12:01
		Validated:	8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	29	27	0.8 U	0.8 U	4 U	0.8 UJ
75-34-3	1,1-DICHLOROETHANE	ug/l	13	12	1.1 J	1 U	5 U	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	8.3	7.8	0.8 U	0.8 U	4 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	4.1 J	4.7 J	5.5	13	5 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	1900	1800	0.8 U	0.8 U	4 U	0.8 U
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	4 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	11	10	0.84 J	1.1 J	4 U	0.8 J
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	4.1 J	4 J	1 U	1.2 J	5 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	560	540	1 U	1 U	5 U	1 U
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	66	73	1 U	1.1 J	6.9	6.9
74-84-0	ETHANE	ug/l	9.8	10	11	1.9 J	5.8	6
74-82-8	METHANE	ug/l	17000	18000	10000	8200	13000	11000
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0881 J	0.0828 U	0.0828 U
7440-38-2	ARSENIC	mg/l	0.0104 J	0.0085 J	0.0156 J	0.0205	0.0093 J	0.0068 U
7440-70-2	CALCIUM	mg/l	254	255	432	498	545	552
7439-89-6	IRON	mg/l	0.043 U	0.043 U	1.96	18.7	5.25	9.61
7439-95-4	MAGNESIUM	mg/l	78.3	77	192	179	287	283
7439-96-5	MANGANESE	mg/l	0.626	0.613	2.8	5.11	5.75	5.77
9/7/7440	POTASSIUM	mg/l	16.6	16.4	27	41.1	104	107
7782-49-2	SELENIUM	mg/l	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U
7440-23-5	SODIUM	mg/l	468	459	435	368	152	155
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	250		412	456 J	730	
TOC	TOTAL ORGANIC CARBON	mg/l	19.4	19.3	33.7	54.8	101	99.1
TIC	TOTAL INORGANIC CARBON	mg/l	230		378	401	630	
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	687	676	889	750	233	222
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.65 J		2	0.06 U	1.6	
14808-79-8	SULFATE (AS SO4)	mg/l	97.6	104	107	3.5 J	328	319
18496-25-8	SULFIDE	mg/l	60.9		25.6	6	13.4	
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL				139	138	
DHBt	DHBt	cells/mL				374	526	
DHC	DHC	cells/mL				126	1660	
TCE	TCE	cells/mL				46.6	144	
VCR	VCR	cells/mL				5.9	132	
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l				0.5 U	0.5 U	
1333-74-0	Hydrogen	nM				2.4	2.7	

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	OR-15SM OR-15SM_071913 7133345 LANCASTERLABS BPW66 WATER 7/19/2013 9:10 8/22/2013	OR-18SM OR-18SM_071213 7126431 LANCASTERLABS BPW61 WATER 7/12/2013 14:50 8/22/2013	PMW-1D PMW-1D_071613 7129629 LANCASTERLABS BPW63 WATER 7/16/2013 17:00 8/22/2013	PMW-1S PMW-1S_071013 025KG-7 LANCASTERLABS/MI/MS 025KG Water 7/10/2013 8/22/2013	PMW-2S PMW-2S_071113 025KG-8 LANCASTERLABS/MI/MS 025KG Water 7/11/2013 8/22/2013	Dup of PMW-2S_071113 PMW-2S PMW-102S_071113 7125994 LANCASTERLABS BPW60 WATER 7/11/2013 12:01 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	8 U	0.8 U	0.95 J	0.8 U	0.8 UJ	0.8 UJ
75-34-3	1,1-DICHLOROETHANE	ug/l	10 U	1 U	1 U	7.1	1.8 J	1.8 J
75-35-4	1,1-DICHLOROETHENE	ug/l	8 U	0.8 U	0.93 J	1.2 J	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	10 U	1 U	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	8 U	5.7	750	320	51	39
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	8 U	0.8 U	0.86 J	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	8 U	1.4 J	4.7 J	16	6.5	6
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	10 U	1 U	12	4.8 J	1.1 J	1 J
75-01-4	VINYL CHLORIDE	ug/l	10 U	14	60	270	58	37
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	1 U	26	20	360	100	100
74-84-0	ETHANE	ug/l	1.4 J	18	1.5 J	220	230	230
74-82-8	METHANE	ug/l	10000	11000	3000	4500	17000	19000
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U
7440-38-2	ARSENIC	mg/l	0.0068 U	0.0068 U	0.0068 U	0.0153 J	0.0068 U	0.0072 J
7440-70-2	CALCIUM	mg/l	670	205	31.3	164	360	357
7439-89-6	IRON	mg/l	71.4	0.043 U	1.29	0.043 U	0.628	0.671
7439-95-4	MAGNESIUM	mg/l	115	47	3.87	24.4	73.5	73.3
7439-96-5	MANGANESE	mg/l	10.2	0.278	0.192	0.266	1.32	1.31
9/7/7440	POTASSIUM	mg/l	147	18.4	10.7	12.5	19.8	19.2
7782-49-2	SELENIUM	mg/l	0.0084 UJ	0.0084 UJ	0.0084 U	0.0084 U	0.0084 UJ	0.0084 UJ
7440-23-5	SODIUM	mg/l	196	92.3	65.4	554	986	998
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	745	136	90.1	90.7	209	
TOC	TOTAL ORGANIC CARBON	mg/l	173	5.7	73.6	37	20.7	21.4
TIC	TOTAL INORGANIC CARBON	mg/l	572	131	16.5	53.7	188	
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	217	49.7	55.3	1070	2250 J	2440 J
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.03 U	0.04 J	0.03 U	0.3 U	0.2	
14808-79-8	SULFATE (AS SO4)	mg/l	1.5 U	398	4.8 J	46.4	4 J	5.3
18496-25-8	SULFIDE	mg/l	0.055 J	32.6	7.7	20.1	10.3	
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL				3370	2610	
DHBt	DHBt	cells/mL				27.1	162	
DHC	DHC	cells/mL				358000	23700	
TCE	TCE	cells/mL				9780	0.9 U	
VCR	VCR	cells/mL				34100	863	
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l				0.5 U	0.5 U	
1333-74-0	Hydrogen	nM				2.4	17	

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	PMW-2D PMW-2D_071113 7125993/025KG-9 LANCASTERLABS/MI BPW60 WATER 7/11/2013 10:35 8/22/2013	PMW-3D PMW-3D_071613 7129620 LANCASTERLABS BPW63 WATER 7/16/2013 12:25 8/22/2013	PMW-3S PMW-3S_071113 025KG-10 LANCASTERLABS/MI/MS 025KG Water 7/11/2013 8/22/2013	PMW-4D PMW-4D_07/17/2013 7131107 LANCASTERLABS BPW64 WATER 7/17/2013 11:20 8/22/2013	PMW-4S PMW-4S_071813 7132181 LANCASTERLABS BPW65 WATER 7/18/2013 16:25 8/22/2013	PMW-5D PMW-5D_07/17/2013 7131105 LANCASTERLABS BPW64 WATER 7/17/2013 11:40 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	40 UJ	17 J	80 UJ	16 U	8 U	80 U
75-34-3	1,1-DICHLOROETHANE	ug/l	50 U	83 J	100 U	94 J	14 J	100 U
75-35-4	1,1-DICHLOROETHENE	ug/l	52 J	70 J	83 J	30 J	26 J	80 U
75-00-3	CHLOROETHANE	ug/l	50 U	20 U	100 U	20 U	10 U	100 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	76000	66000	45000	39000	12000	52000
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	40 U	43 J	80 U	18 J	8 U	80 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	94 J	85 J	810	74 J	350	80 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1100	7400	310 J	470	180	2700
75-01-4	VINYL CHLORIDE	ug/l	2300	1100	7600 J	1200	830	640
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	120	72	1300	210	31	100
74-84-0	ETHANE	ug/l	5 J	15	260	16	73	9.7
74-82-8	METHANE	ug/l	1800	5400	12000	6100	8200	1300
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U
7440-38-2	ARSENIC	mg/l	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0082 J	0.0068 U
7440-70-2	CALCIUM	mg/l	346	343	465	377	718	275
7439-89-6	IRON	mg/l	0.043 U	0.043 U	0.628	0.043 U	1.69	0.043 U
7439-95-4	MAGNESIUM	mg/l	183	153	183	262	330	150
7439-96-5	MANGANESE	mg/l	0.143	0.261	2.14	0.283	1.09	0.231
9/7/7440	POTASSIUM	mg/l	10	14.6	11.1	12	4.56	17.2
7782-49-2	SELENIUM	mg/l	0.0084 UJ	0.0084 U	0.0084 UJ	0.0084 U	0.0084 U	0.0084 U
7440-23-5	SODIUM	mg/l	286	280	601	242	543	543
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	500	603	210	506	106	
TOC	TOTAL ORGANIC CARBON	mg/l	288	418	15.9	253	3.4	293
TIC	TOTAL INORGANIC CARBON	mg/l	212	185	194	253	103	
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	556 J	394	1530 J	413	1850	799
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.6 U	0.6 U	0.3	0.6 U	0.03 U	0.3 U
14808-79-8	SULFATE (AS SO4)	mg/l	180	203	648	151	1770	83.3
18496-25-8	SULFIDE	mg/l	193	201	21.2	375	0.054 U	188
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL	2520		36100			
DHBt	DHBt	cells/mL	7340		102			
DHC	DHC	cells/mL	1800		61400			
TCE	TCE	cells/mL	682		3600			
VCR	VCR	cells/mL	125		7640			
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l			0.5 U			
1333-74-0	Hydrogen	nM			2.4			

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	PMW-5S PMW-5S_070913 7122144 LANCASTERLABS BPW58 WATER 7/9/2013 16:30 8/22/2013	PMW-6D PMW-6D_071613 025KG-19 LANCASTERLABS/MI 025KG Water 7/16/2013 8/22/2013	PMW-6S PMW-6S_070913 7122140 LANCASTERLABS BPW58 WATER 7/9/2013 11:50 8/22/2013	PMW-7D PMW-7D_071213 7126428 LANCASTERLABS BPW61 WATER 7/12/2013 10:35 8/22/2013	PMW-7S PMW-7S_07/17/2013 7131103 LANCASTERLABS BPW64 WATER 7/17/2013 9:55 8/22/2013	PMW-8D PMW-8D_071913 7133348 LANCASTERLABS BPW66 WATER 7/19/2013 11:15 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	8 U	16 U	0.8 U	49 J	0.8 U	40 U
75-34-3	1,1-DICHLOROETHANE	ug/l	11 J	30 J	3.7 J	100 J	78	50 U
75-35-4	1,1-DICHLOROETHENE	ug/l	68	16 U	4 J	40 U	0.8 U	40 U
75-00-3	CHLOROETHANE	ug/l	10 U	20 U	1 U	50 U	1 U	50 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	37000	14000	1600	21000	5	33000
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	8 U	16 U	0.8 U	63 J	0.8 U	40 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	710	42 J	110	70 J	0.8 U	79 J
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1900	460	2.1 J	1400	1 U	4600
75-01-4	VINYL CHLORIDE	ug/l	7200	480	1600	1300	1.3 J	2300
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	230	210	220	340	1 U	130
74-84-0	ETHANE	ug/l	39	21	22	34	1 U	8.3
74-82-8	METHANE	ug/l	2700	2600	6800	4700	6.9	1800
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U
7440-38-2	ARSENIC	mg/l	0.0068 U	0.0068 U	0.0144 J	0.0068 U	0.0068 U	0.0096 J
7440-70-2	CALCIUM	mg/l	488	469	414	304	474	403
7439-89-6	IRON	mg/l	0.205	0.043 U	36.9	0.043 U	1.36	0.043 U
7439-95-4	MAGNESIUM	mg/l	254	176	121	370	642	413
7439-96-5	MANGANESE	mg/l	1.62 J	0.433	5.35 J	0.246	0.2	0.344
9/7/7440	POTASSIUM	mg/l	3.4	7.15	25.1	37.2	5.92	6.34
7782-49-2	SELENIUM	mg/l	0.0084 U	0.0084 U	0.0084 U	0.0084 UJ	0.0084 U	0.0084 UJ
7440-23-5	SODIUM	mg/l	140	188	107	311	163	243
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	143	565	460	272	146	
TOC	TOTAL ORGANIC CARBON	mg/l	8	366	50.5	36.7	4.5	117
TIC	TOTAL INORGANIC CARBON	mg/l	135	199	409	235	142	
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	463	322	159	424	318	270
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.043 J	0.6 U	0.03 U	0.6 U	0.03 U	0.6 U
14808-79-8	SULFATE (AS SO4)	mg/l	1440	401	85.5	1150	3060	1790
18496-25-8	SULFIDE	mg/l	0.054 U	167	0.22	220	0.054 U	157
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL		17300				
DHBt	DHBt	cells/mL		1380				
DHC	DHC	cells/mL		158000				
TCE	TCE	cells/mL		12000				
VCR	VCR	cells/mL		151				
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l						
1333-74-0	Hydrogen	nM						

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	PMW-8S PMW-8S_07/17/2013 7131113 LANCASTERLABS BPW64 WATER 7/17/2013 16:25 8/22/2013	PMW-9D PMW-9D_070913 7122143 LANCASTERLABS BPW58 WATER 7/9/2013 15:35 8/22/2013	PMW-9S PMW-9S_071613 025KG-17 LANCASTERLABS/MI/MS 025KG Water 7/16/2013 8/22/2013	PMW-10D PMW-10D_070913 7122142 LANCASTERLABS BPW58 WATER 7/9/2013 15:35 8/22/2013	PMW-10S PMW-10S_071613 025KG-16 LANCASTERLABS/MI/MS 025KG Water 7/16/2013 8/22/2013	PMW-11D PMW-11D_071013 025KG-6 LANCASTERLABS/MI/MS 025KG Water 7/10/2013 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	9.2	40 U	4 UJ	220	0.8 UJ	30000
75-34-3	1,1-DICHLOROETHANE	ug/l	12	50 U	5 U	210	1 U	800
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	240 J	8.9 J	120	0.8 U	370
75-00-3	CHLOROETHANE	ug/l	1.4 J	50 U	5 U	20 U	1 U	10 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	150	190000	2500	91000	0.96 J	8200
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	680	4 U	21 J	0.8 U	110
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	2.2 J	180 J	21 J	90 J	0.8 U	31 J
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	3.3 J	51000	5400	860	7.6	760
75-01-4	VINYL CHLORIDE	ug/l	200	1700	40	3400	1.3 J	1000
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	320	1200	2.3 J	360	1 U	48
74-84-0	ETHANE	ug/l	17	70	3.1 J	12	1 U	15
74-82-8	METHANE	ug/l	5200	5700	53	2800	7.6	470
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U
7440-38-2	ARSENIC	mg/l	0.0068 U	0.0195 J	0.0068 U	0.0106 J	0.0068 U	0.0096 J
7440-70-2	CALCIUM	mg/l	431	345	444	225	405	244
7439-89-6	IRON	mg/l	1.7	113	0.043 U	50.4	0.043 U	0.215
7439-95-4	MAGNESIUM	mg/l	411	97.5	585	44.4	529	82.5
7439-96-5	MANGANESE	mg/l	1.33	1.44 J	0.383	1.01 J	0.214	0.337
9/7/7440	POTASSIUM	mg/l	8.68	12.4	6.06	3.8	4.55	4.05
7782-49-2	SELENIUM	mg/l	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U
7440-23-5	SODIUM	mg/l	271	294	150	96.3	119	101
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	176	1250	119	525	107	119
TOC	TOTAL ORGANIC CARBON	mg/l	9.6	1040	2.7	414	1.9	21.6
TIC	TOTAL INORGANIC CARBON	mg/l	167	211	116	111	105	97.2
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	539	582	180	165	170	191
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U
14808-79-8	SULFATE (AS SO4)	mg/l	1790	46.4	3310	4.1 J	2840	409
18496-25-8	SULFIDE	mg/l	15.6	2.6	0.054 U	13.3	0.054 U	63.6
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL			0.5 U		0.5 U	712
DHBt	DHBt	cells/mL			80.8		2.4 J	230
DHC	DHC	cells/mL			5.4		4.5	1260
TCE	TCE	cells/mL			4.7		4.2	695
VCR	VCR	cells/mL			0.5 U		0.5 U	768
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l			0.5 U		0.5 U	0.5 U
1333-74-0	Hydrogen	nM			1.7		2.4	8.2

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	PMW-11S PMW-11S_071813 7132172 LANCASTERLABS BPW65 WATER 7/18/2013 11:00 8/22/2013	PMW-12D PMW-12D_071813 7132174 LANCASTERLABS BPW65 WATER 7/18/2013 11:10 8/22/2013	PMW-13D PMW-13D_071813 7132170 LANCASTERLABS BPW65 WATER 7/18/2013 9:25 8/22/2013	PMW-14D PMW-14D_07/17/2013 7131114 LANCASTERLABS BPW64 WATER 7/17/2013 17:20 8/22/2013	PMW-15D PMW-15D_071013 025KG-5 LANCASTERLABS/MI/MS 025KG Water 7/10/2013 8/22/2013	PMW-16D PMW-16D_071813 7132173 LANCASTERLABS BPW65 WATER 7/18/2013 9:50 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	8 U	160 U	160 U	300 J	16000	8900
75-34-3	1,1-DICHLOROETHANE	ug/l	36 J	200 U	290 J	730	7400	2000
75-35-4	1,1-DICHLOROETHENE	ug/l	25 J	340 J	440 J	80 U	480	220 J
75-00-3	CHLOROETHANE	ug/l	10 U	200 U	200 U	100 U	17 J	100 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	12000	230000	210000	74000	10000	64000
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	8 U	160 U	720 J	80 U	22 J	330 J
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	200	160 U	160 U	80 U	33	80 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	230	1600	90000	1000	1100	12000
75-01-4	VINYL CHLORIDE	ug/l	2200	4800	2800	1100	4100	1000
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	220	440	330	300	140	170
74-84-0	ETHANE	ug/l	26	46	55	12	280	6.8
74-82-8	METHANE	ug/l	5700	2100	950	4400	1600	940
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U
7440-38-2	ARSENIC	mg/l	0.0072 J	0.0068 U	0.0068 U	0.0068 U	0.0084 J	0.0068 U
7440-70-2	CALCIUM	mg/l	555	651	421	432	294	274
7439-89-6	IRON	mg/l	0.593	166	238	43	40.8	0.111 J
7439-95-4	MAGNESIUM	mg/l	291	111	106	127	96.6	91.1
7439-96-5	MANGANESE	mg/l	0.552	2.07	2.79	1.98	2.08	0.455
9/7/7440	POTASSIUM	mg/l	3.79	15.1	19.8	8.29	6.59	4.75
7782-49-2	SELENIUM	mg/l	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U
7440-23-5	SODIUM	mg/l	173	285	227	314	132	151
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	152	1330	1130	1000	587	445
TOC	TOTAL ORGANIC CARBON	mg/l	2.7	1150	1020	838	480	294
TIC	TOTAL INORGANIC CARBON	mg/l	149	173	113	163	107	152
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	331	406	352	414	256	227
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.03 U	0.03 U	0.03 U	0.69	0.03 U	0.6 U
14808-79-8	SULFATE (AS SO4)	mg/l	1470	9.4	45.3	2.7 J	3.2 J	16.5
18496-25-8	SULFIDE	mg/l	0.054 U	3	1.6	88.6	84.6	172
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL					116000	
DHBt	DHBt	cells/mL					160000	
DHC	DHC	cells/mL					74800	
TCE	TCE	cells/mL					358000	
VCR	VCR	cells/mL					104	
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l					3.5	
1333-74-0	Hydrogen	nM					470	

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	PMW-17D PMW-17D_071013 025KG-3 LANCASTERLABS/MI/MS 025KG Water 7/10/2013 8/22/2013	RMW-1D RMW-1D_071613 7129617 LANCASTERLABS BPW63 WATER 7/16/2013 9:15 8/22/2013	RMW-2D RMW-2D_071513 025KG-13 LANCASTERLABS/MI 025KG Water 7/15/2013 8/22/2013	RMW-3D RMW-3D_071913 7133347 LANCASTERLABS BPW66 WATER 7/19/2013 10:25 8/22/2013	RMW-4D RMW-4D_071213 7126427 LANCASTERLABS BPW61 WATER 7/12/2013 9:00 8/22/2013	FIELDQC TB13157-A_06/22/2013 7122136 LANCASTERLABS BPW58 WATER 6/22/2013 0:00 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	29000	280 J	800 U	17000	40 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	2300	7	1000 U	160	71 J	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	380	3.4 J	800 U	750	40 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	10 U	1 U	1000 U	10 U	50 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	15000	290	170000	2800	31000	0.8 U
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	65	0.8 U	1200 J	9.7 J	40 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	30 J	0.95 J	800 U	12 J	62 J	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1500	6.5	240000	42 J	3200	1 U
75-01-4	VINYL CHLORIDE	ug/l	790	7	1000 U	61	1400	1 U
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l	140	1 U	240	2.8 J	390	
74-84-0	ETHANE	ug/l	12	14	23	2.4 J	34	
74-82-8	METHANE	ug/l	1300	63	290	38	6500	
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0828 U	0.0828 U	0.0828 U	0.0828 U	0.0828 U	
7440-38-2	ARSENIC	mg/l	0.007 J	0.0068 U	0.0093 J	0.0086 J	0.0068 U	
7440-70-2	CALCIUM	mg/l	264	283	533	244	384	
7439-89-6	IRON	mg/l	0.043 U	0.246	46	0.043 U	0.043 U	
7439-95-4	MAGNESIUM	mg/l	87.1	95	120	74.1	180	
7439-96-5	MANGANESE	mg/l	0.357	0.151	1.31	0.193	0.295	
9/7/7440	POTASSIUM	mg/l	4.82	3.02	5.86	2.64	5.58	
7782-49-2	SELENIUM	mg/l	0.0084 U	0.0084 U	0.0084 U	0.0084 UJ	0.0084 UJ	
7440-23-5	SODIUM	mg/l	135	72.2	260	67.7	224	
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l	320		920 J	87.1	588	
TOC	TOTAL ORGANIC CARBON	mg/l	181	1.9	758	3.8	368	
TIC	TOTAL INORGANIC CARBON	mg/l	139		162	83.3	220	
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l	230	118	615	117	339	
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l	0.6 U	0.03 U	1.1	0.3 U	0.6 U	
14808-79-8	SULFATE (AS SO4)	mg/l	40.4	844	217	574	51.7	
18496-25-8	SULFIDE	mg/l	71	6.4	6.2	30	241	
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL	49300		2440			
DHBt	DHBt	cells/mL	493		591			
DHC	DHC	cells/mL	93400		4480			
TCE	TCE	cells/mL	180000		2260			
VCR	VCR	cells/mL	2260		18.4			
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l	0.5 U					
1333-74-0	Hydrogen	nM	37					

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	FIELDQC TB13157-B_06/22/2013 7123455 LANCASTERLABS BPW59 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-C_06/22/2013 7123456 LANCASTERLABS BPW59 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-D_06/22/2013 7125989 LANCASTERLABS BPW60 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-E_06/22/2013 7125990 LANCASTERLABS BPW60 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-F_06/22/2013 7126423 LANCASTERLABS BPW61 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-G_06/22/2013 7126424 LANCASTERLABS BPW61 WATER 6/22/2013 0:00 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 UJ	0.8 UJ	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l						
74-84-0	ETHANE	ug/l						
74-82-8	METHANE	ug/l						
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l						
7440-38-2	ARSENIC	mg/l						
7440-70-2	CALCIUM	mg/l						
7439-89-6	IRON	mg/l						
7439-95-4	MAGNESIUM	mg/l						
7439-96-5	MANGANESE	mg/l						
9/7/7440	POTASSIUM	mg/l						
7782-49-2	SELENIUM	mg/l						
7440-23-5	SODIUM	mg/l						
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l						
TOC	TOTAL ORGANIC CARBON	mg/l						
TIC	TOTAL INORGANIC CARBON	mg/l						
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l						
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l						
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l						
14808-79-8	SULFATE (AS SO4)	mg/l						
18496-25-8	SULFIDE	mg/l						
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL						
DHBt	DHBt	cells/mL						
DHC	DHC	cells/mL						
TCE	TCE	cells/mL						
VCR	VCR	cells/mL						
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l						
1333-74-0	Hydrogen	nM						

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	FIELDQC TB13157-H_06/22/2013 7127973 LANCASTERLABS BPW62 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-I_06/22/2013 7127974 LANCASTERLABS BPW62 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-J_06/22/2013 7129614 LANCASTERLABS BPW63 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-K_06/22/2013 7129615 LANCASTERLABS BPW63 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-L_06/22/2013 7131099 LANCASTERLABS BPW64 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-M_06/22/2013 7131100 LANCASTERLABS BPW64 WATER 6/22/2013 0:00 8/22/2013
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 UJ	0.8 UJ	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
	RSK 175 VOLATILES							
74-85-1	ETHENE	ug/l						
74-84-0	ETHANE	ug/l						
74-82-8	METHANE	ug/l						
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l						
7440-38-2	ARSENIC	mg/l						
7440-70-2	CALCIUM	mg/l						
7439-89-6	IRON	mg/l						
7439-95-4	MAGNESIUM	mg/l						
7439-96-5	MANGANESE	mg/l						
9/7/7440	POTASSIUM	mg/l						
7782-49-2	SELENIUM	mg/l						
7440-23-5	SODIUM	mg/l						
	WET CHEMISTRY							
7440-44-0	TOTAL CARBON	mg/l						
TOC	TOTAL ORGANIC CARBON	mg/l						
TIC	TOTAL INORGANIC CARBON	mg/l						
	DISSOLVED INORGANICS							
16887-00-6	CHLORIDE (AS CL)	mg/l						
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l						
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l						
14808-79-8	SULFATE (AS SO4)	mg/l						
18496-25-8	SULFIDE	mg/l						
	MICRO GENE ANALYSIS							
BVC	BVC	cells/mL						
DHBt	DHBt	cells/mL						
DHC	DHC	cells/mL						
TCE	TCE	cells/mL						
VCR	VCR	cells/mL						
	MICROSEEPS DATA							
74-86-2	Acetylene	ug/l						
1333-74-0	Hydrogen	nM						

Ekonol Facility Validated Groundwater Analytical Results Wheatfield, New York 2nd Quarter 2013 (July)		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	FIELDQC TB13157-N_06/22/2013 7132168 LANCASTERLABS BPW65 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-O_06/22/2013 7132169 LANCASTERLABS BPW65 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-P_06/22/2013 7133342 LANCASTERLABS BPW66 WATER 6/22/2013 0:00 8/22/2013	FIELDQC TB13157-Q_06/22/2013 7133343 LANCASTERLABS BPW66 WATER 6/22/2013 0:00 8/22/2013
CAS NO.	COMPOUND	UNITS:				
	VOLATILES					
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	1 U	1 U	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	1 U	1 U	1 U	1 U
	RSK 175 VOLATILES					
74-85-1	ETHENE	ug/l				
74-84-0	ETHANE	ug/l				
74-82-8	METHANE	ug/l				
	DISSOLVED METALS					
7429-90-5	ALUMINUM	mg/l				
7440-38-2	ARSENIC	mg/l				
7440-70-2	CALCIUM	mg/l				
7439-89-6	IRON	mg/l				
7439-95-4	MAGNESIUM	mg/l				
7439-96-5	MANGANESE	mg/l				
9/7/7440	POTASSIUM	mg/l				
7782-49-2	SELENIUM	mg/l				
7440-23-5	SODIUM	mg/l				
	WET CHEMISTRY					
7440-44-0	TOTAL CARBON	mg/l				
TOC	TOTAL ORGANIC CARBON	mg/l				
TIC	TOTAL INORGANIC CARBON	mg/l				
	DISSOLVED INORGANICS					
16887-00-6	CHLORIDE (AS CL)	mg/l				
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l				
7723-14-0	PHOSPHORUS, DISSOLVED (AS P)	mg/l				
14808-79-8	SULFATE (AS SO4)	mg/l				
18496-25-8	SULFIDE	mg/l				
	MICRO GENE ANALYSIS					
BVC	BVC	cells/mL				
DHBt	DHBt	cells/mL				
DHC	DHC	cells/mL				
TCE	TCE	cells/mL				
VCR	VCR	cells/mL				
	MICROSEEPS DATA					
74-86-2	Acetylene	ug/l				
1333-74-0	Hydrogen	nM				