



FIELD ACTIVITY REPORT

Report Number/Date:

2009 2544 V1
5-14-09

Project Name:
TRONOX Groundwater Sampling

Project Number:
20092544V1

Report By:
D. Davis

Personnel:
D. Davis, D. Qualls

Location:
VARIOUS WELLS

Equipment:
GRUNDFOSS

Client:
TRONOX

Weather:
SUNNY, HOT

- 0600 AT GES LOAD SUPPLIES
- 0700 AT AODUA - DUMP PURGE WATER
- 0827 collect samples #58A H-58A
- 0900 collect samples at H-48. Well purged to ~2 feet above bottom - below pump - let it recharge for 5 min and sample with disposable bailer.
- 0955 - AT TR-12; PRESSURE METER ON TOP OF WELL, ARTESIAN.
- 1040 collect samples at MC-65. Talk with Henderson Police.
- 1210 collect samples at PC-21. Well is noted as PC-21A on map, labeled as PC-21. GPS COORDS. MATCH UP.
- 1307 collect sample at MC-6
- 1356 collect sample at MC-7
- 1400 collect sample at MC-69
- 1510 locate MC-3. will start with MC-3 5-15-09 GO TO DUMP PURGE WATER and ship samples.

Printed Name/Signature: Doug Davis



Groundwater Sampling Data Sheet

Well I.D. MC-69 Date: 5-14-09
 Sampler's Name: Davis / Qualls
 Purging Equipment: Gambros
 Client: TROXEL Project No.: 20092544VI

Casing Type: PVC
 Casing Diameter: 2 inch
 Total Well Depth: 45.00 feet
 Depth to Water: - 29.35 feet
 Water Column Thickness: = 15.65 feet
 Unit Casing Volume: x 0.16 gallon / foot
 Casing Water Volume: x 2.5 gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = 7.5 gallons

UNIT CASING VOLUMES
 2" = 0.16 gal/lin ft.
 4" = 0.67 gal/lin ft.
 6" = 1.47 gal/lin ft.

Purged (gallons)	Time	DO	Redox	Fe	Conductance (u mhos / x1000)	Temperature (Celcius)	pH	Observations
1	1423					27.7	7.30	
2	1428	X	X	X		27.1	7.36	Clear
3	1433	X	X	X		26.3	7.36	
4	1438	X	X	X		26.4	7.37	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 4 Gallons
 Depth to Water at Sample Collection:
 Sample Collection Time: 1440
 Purged Dry (Y/N): N

Comments:



Groundwater Sampling Data Sheet

Well I.D. ML-7 Date: 5-14-09
 Sampler's Name: Davis / Qualls
 Purging Equipment: Gravel Pos
 Client: TRONOX Project No.: 20092544 V1

Casing Type: PVC
 Casing Diameter: 2 inch
 Total Well Depth: 41.0 feet
 Depth to Water: 26.4 feet
 Water Column Thickness: = 14.6 feet
 Unit Casing Volume: x 0.16 gallon / foot
 Casing Water Volume: x 2.33 gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = 7.0 gallons

UNIT CASING VOLUMES
 2" = 0.16 gal/lin ft.
 4" = 0.67 gal/lin ft.
 6" = 1.47 gal/lin ft.

Purged (gallons)	Time	DO	Redox	Fe	Conductance (u mhos / x1000)	Temperature (Celcius)	pH	Observations
<u>121.5</u>	<u>1348</u>					<u>27.3</u>	<u>7.86</u>	
<u>3</u>	<u>1348</u>	X	X	X		<u>27.7</u>	<u>7.50</u>	
<u>6</u>	<u>1353</u>	X	X	X		<u>22.7</u>	<u>7.55</u>	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 7 Gallons
 Depth to Water at Sample Collection: _____
 Sample Collection Time: 1356
 Purged Dry (Y/N): _____

Comments: Can only pump at 2 liter/min minimum.



Groundwater Sampling Data Sheet

Well I.D. MC-6 Date: 5-14-09
 Sampler's Name: Davis / Qualls
 Purging Equipment: Grandfos
 Client: TRONOX Project No.: 2009 2844N1

Casing Type: PVC
 Casing Diameter: 2 inch
 Total Well Depth: 39.00 feet
 Depth to Water: - 26.48 feet
 Water Column Thickness: = 12.52 feet
 Unit Casing Volume: x 0.16 gallon / foot
 Casing Water Volume: x 2.0 gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = 6.0 gallons

UNIT CASING VOLUMES
 2" = 0.16 gal/lin ft.
 4" = 0.67 gal/lin ft.
 6" = 1.47 gal/lin ft.

Purged (gallons)	Time	DO	Redox	Fe	Conductance (u mhos / x1000)	Temperature (Celcius)	pH	Observations
1	1255					26.8	7.39	
2	1300	X	X	X		26.8	7.42	
5	1305	X	X	X		26.3	7.43	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 6 Gallons
 Depth to Water at Sample Collection: _____
 Sample Collection Time: 1307
 Purged Dry (Y/N): N

Comments: Can only pump at greater than 1 liter/min or pump does not bring water to surface.



GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.
 (702) 365-1001
 7150 Placid Street
 Las Vegas, NV 89119
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Groundwater Sampling Data Sheet

Well I.D. PC-21 Date: 5-14-09
 Sampler's Name: Davis / Qualls
 Purging Equipment: Bailer
 Client: MOROX Project No.: 20092544V1

Casing Type: PVC
 Casing Diameter: 2 inch
 Total Well Depth: 36.91 feet
 Depth to Water: - 30.70 feet
 Water Column Thickness: = 6.21 feet
 Unit Casing Volume: x 0.16 gallon / foot
 Casing Water Volume: x 0.99 gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = 2.98 gallons

UNIT CASING VOLUMES
 2" = 0.16 gal/lin ft.
 4" = 0.67 gal/lin ft.
 6" = 1.47 gal/lin ft.

Purged (gallons)	Time	DO	Redox	Fe	Conductance (u mhos / x1000)	Temperature (Celcius)	pH	Observations
1	1145					28.5	7.27	s: 14
2	1156	X	X	X		22.0	7.55	
3	1205	X	X	X		26.3	7.52	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: ~3 Gallons
 Depth to Water at Sample Collection: _____
 Sample Collection Time: 1210
 Purged Dry (Y/N): y - nearly.

Comments: Well listed as PC-21A, MARKED AS PC-21 in field,
Check GPS COORDINATES; too silty to use pump.
Purge and sample with bailer. Purge ^{NEARLY} dry at approx. 3 gallons.
Let recharge for 5 min and sample



Groundwater Sampling Data Sheet

Well I.D. MC-65 Date: 5-14-09
 Sampler's Name: Darius / Qualls
 Purging Equipment: 6" mud flow
 Client: Trexco Project No.: 2009 2544 v1

Casing Type: PVC **UNIT CASING VOLUMES**
 Casing Diameter: 2 inch 2" = 0.16 gal/lin ft.
 Total Well Depth: 41.65 feet 4" = 0.67 gal/lin ft.
 Depth to Water: - 33.10 feet 6" = 1.47 gal/lin ft.
 Water Column Thickness: = 8.55 feet
 Unit Casing Volume: x 0.16 gallon / foot
 Casing Water Volume: x 1.36 gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = 4.10 gallons

Purged (gallons)	Time	DO	Redox	Fe	Conductance (u mhos / x1000)	Temperature (Celcius)	pH	Observations
1	1025					27.0	7.14 7.14	clear
2	1030	X	X	X		26.8	7.24	
3.5	1035	X	X	X		26.3	7.24	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 4 Gallons
 Depth to Water at Sample Collection: _____
 Sample Collection Time: 1040
 Purged Dry (Y/N): N

Comments: pumping approximately 1 liter/min



Groundwater Sampling Data Sheet

Well I.D. H-48 Date: 5-14-09
 Sampler's Name: DANIS / DANIS
 Purging Equipment: Gravel box
 Client: STURCOX Project No.: 20092844V1
 Casing Type: PVC **UNIT CASING VOLUMES**
 Casing Diameter: 4 inch 2" = 0.16 gal/lin ft.
 Total Well Depth: 38.00 feet 4" = 0.67 gal/lin ft.
 Depth to Water: - 28.85 feet 6" = 1.47 gal/lin ft.
 Water Column Thickness: = 9.15 feet
 Unit Casing Volume: x 0.67 gallon / foot
 Casing Water Volume: x 6.13 gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = 18.39 gallons

Purged (gallons)	Time	DO	Redox	Fe	Conductance (u mhos / x1000)	Temperature (Celcius)	pH	Observations
1.5	0910					26.0	5.68	
3	0915	X	X	X		26.1	5.65	
4.5	0920	X	X	X		26.7	5.54	
6.0	0925	X	X	X		26.6	5.54	
7.0	0930	X	X	X		26.7	5.54	
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 7 Gallons
 Depth to Water at Sample Collection: 36.5
 Sample Collection Time: 0940
 Purged Dry (Y/N): Almost -

Comments: Steel casing, rest on well/gravel.
Well pumped to nearly dry - water below pump (36')
Let well recharge for 5 min and sample with disposable
bailler



Groundwater Sampling Data Sheet

Well I.D. H-58A ^{PP} ~~H-58A~~ Date: 5-14-09
 Sampler's Name: DAVIS, Quail
 Purging Equipment: GLUMEXOS
 Client: TRONOX Project No.: 20092544 V1

Casing Type: PVC **UNIT CASING VOLUMES**
 Casing Diameter: 4 inch 2" = 0.16 gal/lin ft.
 Total Well Depth: 61.8 feet 4" = 0.67 gal/lin ft.
 Depth to Water: - 29.44 feet 6" = 1.47 gal/lin ft.
 Water Column Thickness: = 32.36 feet
 Unit Casing Volume: x 0.67 gallon / foot
 Casing Water Volume: x 21.68 gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = 65.04 gallons

Purged (gallons)	Time	DO	Redox	Fe	Conductance (u mhos / x1000)	Temperature (Celcius)	pH	Observations
<u>1.</u>	<u>0745</u>					<u>25.4</u>	<u>7.32</u>	<u>cloudy</u>
<u>5</u>	<u>0750</u>	X	X	X		<u>25.4</u>	<u>7.34</u>	<u>clear</u>
<u>6.5</u>	<u>0755</u>	X	X	X		<u>25.5</u>	<u>7.31</u>	
<u>10</u>	<u>0800</u>	X	X	X		<u>25.4</u>	<u>7.36</u>	
<u>20</u>	<u>0825</u>	X	X	X		<u>25.8</u>	<u>7.36</u>	
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 20 Gallons
 Depth to Water at Sample Collection: _____
 Sample Collection Time: 0827
 Purged Dry (Y/N): N

Comments: Pumping approximately ^{1.5} 0.8 gallons/min. - as low as we can pump and get return; Pump slows down ~0.5 gal/min.

From: Origin ID: LASA (702) 651-2234
 Susan Crowley
 Tronox
 8000 West Lake Mead Parkway
 Henderson, NV 89015



J30110301302023

Ship Date: 14MAY09
 ActWgt: 50.0 LB
 CAD: 7219287/NET9011
 Account#: S *****

Delivery Address Bar Code



Ref # annual water sampling-10181.23
 Invoice #
 PO #
 Dept #

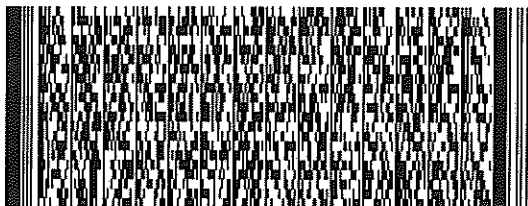
SHIP TO: (626) 386-1100 BILL SENDER

Sample Receiving
MWH Labs
750 ROYAL OAKS DR STE 100

MONROVIA, CA 91016

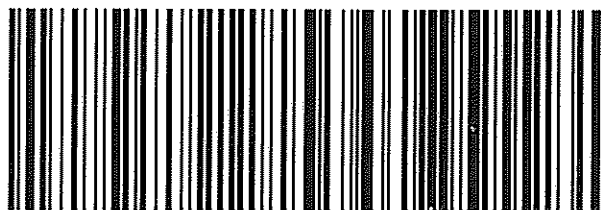
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