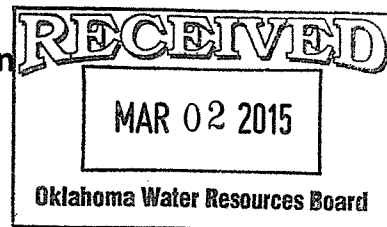


Vulcan Materials Company
North Troy Quarry
Water Management and Conservation Plan



Characterization of Area and Site Plan

See Appendix A.

Facility Layout/Water Flows

See Appendix B.

Estimated Flows

Pit Water To Holding Basins and Groundwater Infiltration Areas	3,300 gpm
Pit Water To Stream Augmentation Points	2,300 gpm
Holding Basin To Plant	5,000 gpm
Return Flow From Plant	4,800 gpm
Stream Water Diversion From Mill Creek	2,000 gpm

Water Schematic

See Appendix C.

Augmentation of Stream water and/or Groundwater

1. Under normal conditions, excess pit water will be diverted to onsite infiltration areas (See Appendix A) for ground water recharge. Records of the infiltration test for each area are attached (See Appendix E). If additional infiltration areas are added, the infiltration tests results will be included in the quarterly report following the test.
2. Groundwater augmentation is accomplished by pumping pit water to one of three groundwater augmentation areas. The water pumped to these areas is metered as it leaves the pit and the beginning and ending meter readings, the start/stop date and time, and destination of the water are logged on a pump log sheet. With the exception of rainfall and/or evaporation, no water is removed or added from other sources. Thus the metered amount pumped to those areas is the volume of groundwater augmentation reported for augmentation credits.
3. Excess pit water may be diverted to Mill Creek, either via an unnamed tributary or via Warren Pond (See Appendix C). Stream augmentation will be based on an evaluation of stream flow conditions at that time, and may or may not take priority over groundwater augmentation.
4. If consumptive use of groundwater from the pit and permitted groundwater wells exceeds the EPS, then the volumes of pit water used for augmentation of stream flow or groundwater may be credited against the consumptive use above the Equal Proportionate Share.
5. Credits for the stream augmentation of Mill Creek will be allowed as permitted under applicable law. The USGS Streamstats program is used to determine the Median Flow for Mill Creek at the bridge on Cyrus-Harris Road. The value given by Streamstats is 9.09 cfs. This will be used as the maximum flow for which augmentation credits can be obtained.
6. The Mill Creek Stream Gage will be used to determine if the flow in Mill Creek is below the limit for stream augmentation credits for that day. Quarry operations sometimes require that pit dewatering continue 24 hours per day. On these occasions, if there has not been recordable precipitation at the stream gage, it will be presumed that the unaltered stream flow is still below the augmentation limit.

7. Sample Stream Augmentation Data

Mill Creek 2013 Augmentation and Gage Data												
Start Date	Start Time	Stop Date	Stop Time	Begin Reading	End Reading	Ac-ft Pumped	Mill Creek Stream Gage Reading	Time Read	Stream Height	Stream Flow		
1/1/2013	12:30pm	1/2/2013	4:30pm	2,142,370,000	2,146,620,000	13.04	USGS 7331200	1:30 PM CST	5.82 P	1.4 P		
1/3/2013	7:30am	1/3/2013	3:00pm	2,146,620,000	2,148,020,000	4.30	USGS 7331200	7:30 AM CST	5.96 P	3.5 P		
1/5/2013	8:05am	1/5/2013	4:37pm	2,148,020,000	2,149,390,000	4.20	USGS 7331200	8:00 AM CST	5.83 P	1.6 P		
1/7/2013	6:10am	1/8/2013	2:00pm	2,149,390,000	2,154,160,000	14.64	USGS 7331200	6:00 AM CST	5.81 P	1.4 P		
1/28/2013	11:45am	1/28/2013	3:40pm	2,182,970,000	2,183,370,000	1.23	USGS 7331200	1/27/13 12:30 AM CST	5.75 P	0.86 P		
Note: Data was not recorded for 1/28/13. Data shown is for 1/27/13 and 1/29/13.							USGS 7331200	1/29/13 7:00 PM CST	5.87 P	2 P		
1/29/2013	7:30am	1/29/2013	2:15pm	2,183,370,000	2,184,070,000	2.15	USGS 7331200	7:00 PM CST	5.87 P	2 P		
1/30/2013	7:05am	1/30/2013	3:35pm	2,184,070,000	2,184,930,000	2.64	USGS 7331200	1/30/2013 1:30 CST	5.87 P	2 P		
Note: Data was not recorded for 1/30/13 @ 7:00am. Data shown is for 1:30am and 11:00pm.							USGS 7331200	1/30/2013 23:00 CST	5.78 P	1.1 P		
2/3/2013	Start time not logged, app. 7:30am	2/5/2013	3:40pm	2,187,890,000	2,193,610,000	17.55	USGS 7331200	8:30 AM CST	5.73 P	0.73 P		
							USGS 7331200	8:30 AM CST	5.74 P	0.79 P		
							USGS 7331200	8:30 AM CST	5.73 P	0.73 P		
2/6/2013	8:40am	2/6/2013	3:40pm	2,193,610,000	2,194,560,000	2.92	USGS 7331200	8:30 AM CST	5.88 P	2.2 P		
2/7/2013	8:00am	2/7/2013	3:40pm	2,194,560,000	2,195,690,000	3.47	USGS 7331200	8:00 AM CST	5.93 P	2.9 P		
2/8/2013	6:20am	2/8/2013	Stop time not logged, app. 3:40pm	2,195,690,000	2,197,230,000	4.73	USGS 7331200	6:00 AM CST	5.89 P	2.3 P		
2/9/2013	10:37am	2/9/2013	3:26pm	2,197,230,000	2,198,050,000	2.52	USGS 7331200	10:30 AM CST	5.85 P	1.8 P		
2/11/2013	Start time not logged, app. 7:30am	2/12/2013	4:37pm	2,198,050,000	2,203,180,000	15.74	USGS 7331200	2/11/2013 7:30 CST	5.79 P	1.2 P		
							USGS 7331200	2/12/2013 7:30 CST	6 P	4.4 P		
2/13/2013	6:45am	2/13/2013	4:40pm	2,203,180,000	2,204,710,000	4.70	USGS 7331200	6:30 AM CST	5.98 P	3.9 P		

8. All volumes of pit water used for augmentation will be reported on the quarterly and annual reports submitted to the OWRB.

Water Rights Information

Permits are included in Appendix D.

Groundwater Rights

1. Vulcan Materials Permit 2002-602 – 700 acres @ 4.7 inches per year, 274 acre-feet
2. Vulcan (pending) Permit 2006-601A - 268.83 acres @ 4.7 inches per year, 105.29 acre-feet
3. Vulcan (pending) Permit 2006 – 601B – 550.03 acres @ 4.7 inches per year, 215.43 acre-feet

Stream water Rights

1. Vulcan Materials Permit 2004-033 – 1,425 acre-feet per year

Consumptive Use of Pit Water

1. Material transported off site – moisture content is determined based on in-house quality control testing by VMC personnel. Materials are grouped into three categories – base products, coarse aggregates (>3”), and fine aggregates (< ½”). Average moisture contents are determined for each category based on the previous year’s testing. These moisture contents are then used to determine the monthly volume of water transported offsite.
2. Evaporative losses – net evaporation from the pit sumps and gross evaporation from ponds not used for groundwater augmentation is measured with an onsite weather station. In the event the weather station fails to record the data, then OWRB average evaporation rates are used for that period.
3. Plant dust control – dust control is accomplished by spray nozzles that spray directly onto the product. The water consumed by dust control becomes a part of the product moisture content and is charged as such.
4. Plant wash water – there are numerous hoses throughout the plant used to wash buildup off material off of the concrete slabs and out from under equipment. This water flows onto the ground and is absorbed back into the ground, thus it is returned to the basin and is not charged as consumptive use.
5. Miscellaneous onsite beneficial use – currently there are no uses of water that fall in this category.
6. Haul road dust control – the number of loads of water used during a given month are logged. This count is multiplied by the volume of the truck to determine the volume of water consumed. This volume will typically be small due to the use of dust control agents at the facility.

7. Miscellaneous beneficial uses offsite – during periods of drought, the facility assists neighboring landowners by providing water for livestock, after notifying OWRB of such intent. This volume is reported as consumptive use. Water for firefighting is also supplied as needed during wildfire seasons. This volume is also reported as consumptive use, but prior notification is usually not practical.

Consumptive Use	Estimated Annual Volume, ac-ft.
Moisture content of material transported offsite	30
Evaporative losses	25
Haul road dust control	4
Miscellaneous onsite beneficial uses	0
Miscellaneous offsite beneficial uses	1
Total Estimated Consumptive Use	60

Determination of Water Amounts

Groundwater Entering the Pit – determined by measuring the change in the west sump volume during the monitoring period plus the volume of groundwater pumped out of the pit. This change in volume is reported in the column labeled “Total Groundwater Entering The Pit” in the quarterly monitoring report. The change in volume is determined by multiplying the difference in the surface elevation at the beginning of the month and the end of the month and multiplying this difference by the surface area of the sump. This value, in cubic feet, is then converted to acre-feet for entry into the quarterly report.

Example: $((H1-H2)*SA)/43,560 = V$

H1=beginning water elevation, feet

H2=ending water elevation, feet

SA=sump surface area, square feet

V=volume change, acre-feet

Surface Water Entering the Pit – Calculated by use of the NH-4 Runoff Formula and precipitation data from the onsite weather station. See sample data and formulas in Appendix F.

Water diverted from the Pit – water diverted from the pit is metered and the beginning and ending meter readings are recorded by plant personnel. Occasionally, it is necessary to fill the water truck directly from the pit. These loads are reported on a daily water truck log.

Disposition of Pit Water – destination of water diverted from the pit is recorded along with the meter readings.

Consumptive Use of Pit Water – the moisture content of materials shipped off site is determined by VMC Quality Control personnel.

Estimated Annual Volumes (based on 2012 data)

Total Groundwater Entering Pit, Ac-ft	1,340 ac-ft
Total Storm Water Entering Pit	132 ac-ft
Total Pit Water Diverted	1,472 ac-ft
Pit Water Sent to Holding Basins	171 ac-ft
Pit Water Used For Groundwater Augmentation	524 ac-ft
Pit Water Used For Stream Water Augmentation	778 ac-ft

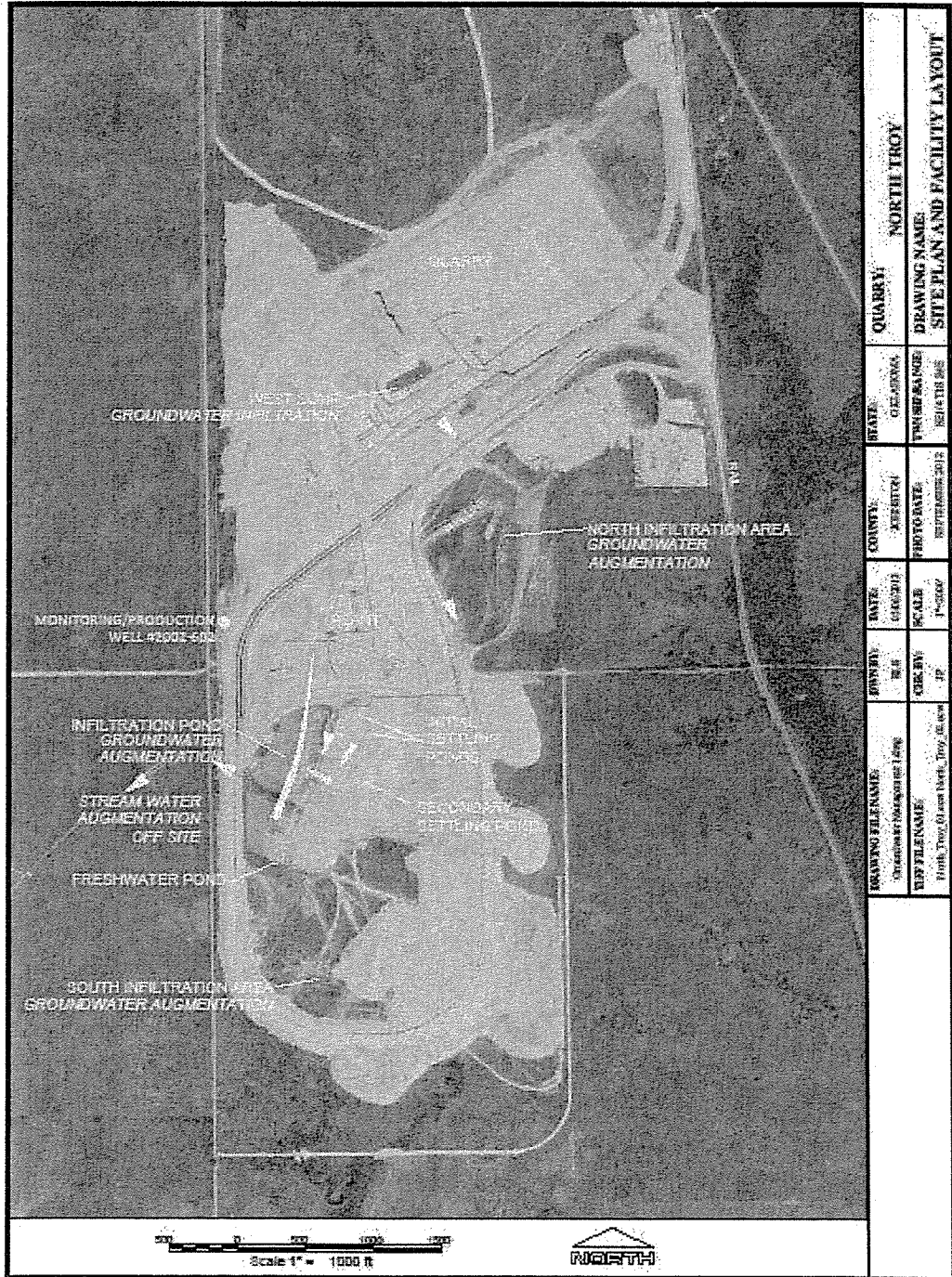
Hydrologic Monitoring

1. Vulcan Materials' monitoring plan will comply with the requirements of 82 O.S. 1020.2.E.1., i.e., the plan will provide for the measurement or reasonable estimation of groundwater and surface water, separately stated, entering the pit, the water diverted from the pit, the disposition of the water from the pit, and the consumptive use of water from the pit, and quarterly and annual reports will be filed per the statute.
2. In addition, due to pre-existing agreements, Vulcan Materials is already monitoring and will continue to monitor and report the following:
 - a) Precipitation and evaporation data will be taken from a weather station located at the mine office. In the event of equipment failure or loss of data, precipitation data will be taken from the USGS station located at the Mill Creek Bridge on the Cyrus-Harris Road. In the case of missing evaporation data, OWRB average evaporation values will be used for that period.
 - b) Depth-to-groundwater monitoring is conducted at four wells per requirements of Temporary Groundwater Permit #2002-602 and is subject to change with review and approval of the Technical Review Committee as established by the settlement agreement with the National Park Service and the US Fish and Wildlife Department. Well #2002-602 is located on the mine property, and Well #104806 is located northwest of the mine property. These two wells are monitored in-house by Meridian. Well #92477 and Well #92479 are monitored by the USGS under a contract sponsored by Meridian. Data from the wells will be submitted with the quarterly and annual reports.
 - c) Stream water monitoring is conducted on Pennington Creek by the USGS under the above mentioned permit and agreement. Mill Creek is voluntarily monitored by VMC in cooperation with USGS at the bridge on Cyrus-Harris Road. This monitoring can cease at any time at VMC's discretion. Data from both stream gauges will be submitted with the quarterly and annual reports.

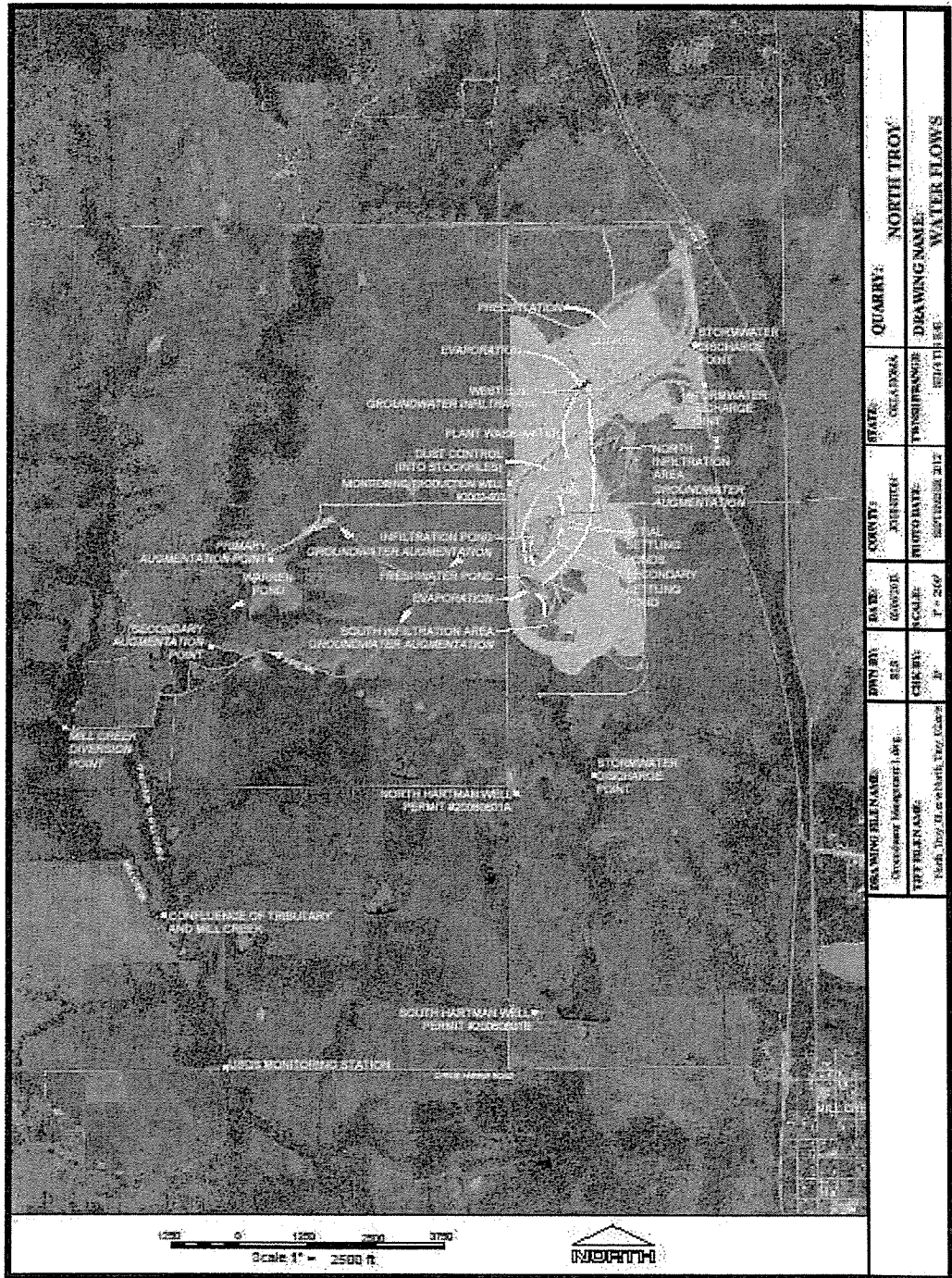
Quality Assurance Plan

1. Onsite weather station – the station is calibrated and maintained in accordance with the manufacturer's recommendations contained in the manuals provided with the weather station.
2. Meters – flow meters will be checked annually by the supplier's representative for accurate flow using industry accepted equipment and practices.
3. Product moisture contents – moisture content testing is performed by VMC personnel following ASTM, ODOT, TxDOT, FAA, and USACOE standard testing procedures. An example of the applicable ASTM Standard Procedure used is ASTM D2216-10.
4. Transducers used for monitoring groundwater levels are checked quarterly by using a depth-to-water measuring tape to verify the transducer reading. If the two readings differ by more than 0.2', then the transducer recalibrated to the correct depth as determined by the depth-to-water tape.

Appendix A Site Plan and Facility Layout

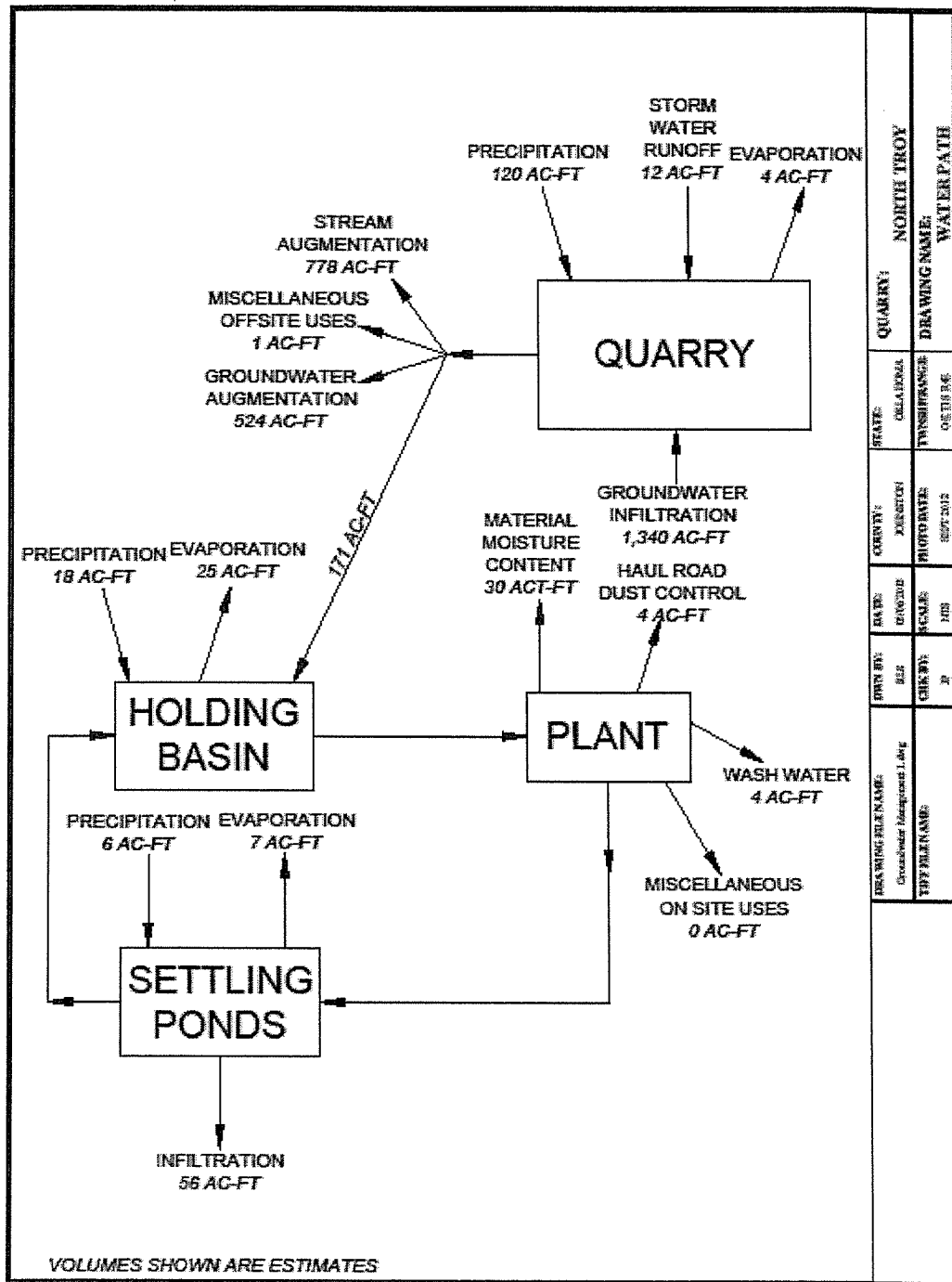


Appendix B Water Flows



DRAWING FILE NAME: Appendix B - Water Flows		DATE: 04/03/15	STATE: OHIO	QUARRY: NORTH TROY
DATE: 04/03/15	SCALE: 1" = 2500'	PROJECT: NORTH TROY QUARRY	DESIGNER: VULCAN CONSTRUCTION MATERIALS LP	DRAWING NAME: WATER FLOWS
DATE: 04/03/15	SCALE: 1" = 2500'	PROJECT: NORTH TROY QUARRY	DATE: 04/03/15	DATE: 04/03/15
DATE: 04/03/15	SCALE: 1" = 2500'	PROJECT: NORTH TROY QUARRY	DATE: 04/03/15	DATE: 04/03/15
DATE: 04/03/15	SCALE: 1" = 2500'	PROJECT: NORTH TROY QUARRY	DATE: 04/03/15	DATE: 04/03/15

Appendix C Water Schematic



	STATE:	OKLAHOMA	COUNTY:	JENKINSON	QUARRY:	NORTH TROY
	TOWNSHIP:	OSBURN	PROJECT:	1007-2012	DRAWING NAME:	WATER PATH
	DATE:	06/18/14	DRAWN BY:	SR	CHECK BY:	SR
	SCALE:	AS SHOWN	DESIGNED BY:	SR	PROJECT NAME:	
	AREA ENGINEER NAME:	Groundwater Management Dept.	TYPED NAME:		DATE:	

Appendix D
Water Permits

OKLAHOMA WATER RESOURCES BOARD
TEMPORARY PERMIT TO TAKE AND USE GROUNDWATER

Permit Number: 2002-602
Date Filed: November 18, 2002
County: Johnston
Groundwater Basin: Arbuckle-Simpson
Original Date of Issue: July 11, 2006

The OKLAHOMA WATER RESOURCES BOARD hereby reissues **Temporary Groundwater Permit Number 2002-602** to reflect a change of ownership to Vulcan Construction Materials, LP whose address is PO Box 791550, San Antonio TX 78279. The permit is in all other respects unchanged and authorizes the use of 274 acre-feet of groundwater per calendar year. The water is to be withdrawn from one well located in the SW SW of Sec 25, T1S, R4EIM for the purpose of aggregate washing and dust control. The land dedicated to this permit totals 700 acres and is located as follows: 34 acs in the NW SE, 57 acs in the W2 NE and 320 acs in the W2 of Sec 25; 289 acs in the W2 of Sec 36; T1S, R4EIM.

This allocation is subject to the following terms, conditions, and limitations:

1. This permit shall lapse unless it is duly revalidated annually by the permit holder. Timely return of the completed water use report, which is mailed by the Board in January of each year, revalidates the temporary permit for that year;
2. This permit shall lapse upon issuance of a regular permit after completion by the Board of the applicable groundwater basin study and determination of the maximum annual yield of the basin;
3. Changes in well locations from those listed above must be approved by the Board and may, in the future, be subject to well spacing orders of the Board;
4. If a proposed well is not drilled and completed within one year of approval of the well location, groundwater will no longer be authorized to be withdrawn from that location;
5. The use of groundwater authorized by this temporary permit may be used only as needed to supplement water supplied by Mill Creek and stormwater on the site;
6. The "Monitoring and Management Plan for Future Permitted Groundwater Development" ("M&M Plan") attached hereto is incorporated by reference into the terms, provisions and conditions of this permit;
7. Vulcan Construction Materials, LP shall monitor and protect the groundwater as follows:
 - a. From now until February 15, 2008, Vulcan shall cause groundwater samples to be taken once each month, by a person acceptable to the Board's Executive Director, from (i) the windmill well in the SE ¼ of the SE ¼ of the SW ¼ of Section 25-1-4, (ii) any groundwater that infiltrates into the mining pit, and (iii) the production well in the SW ¼ of the SW ¼ of Section 25-1-4. On or after February 15, 2008, upon request by Vulcan the Board's Executive director may in his discretion reduce the frequency of sampling to once each three months;
 - b. Vulcan shall cause all samples to be analyzed for TPH using method 1005 for quantitative analysis of hydrocarbons between C₆ and C₃₅ (which includes gasoline, diesel and lube oil). The samples shall be analyzed by a lab certified by DEQ and acceptable to the Board's Executive Director;
 - c. The methodologies and protocols followed in the sampling and analysis shall be acceptable to the Board's Executive Director;
 - d. Written records of all sampling and analysis shall be filed with the Board no later than thirty (30) days after such records are created. The records will be make available to the public as provided by the Oklahoma Open Records Act, 51 O.S. § 24A.1 and following;


Appendix D
Water Permits (cont'd)

- e. If any sample analysis shows the presence of TPH, then Vulcan shall immediately coordinate with the Board staff, develop a remediation plan acceptable to the Board's Executive Director, and implement the plan to minimize the potential of contamination moving off the Mining Lease property; and
- f. The Board's Executive Director may modify or add to these conditions (listed in Paragraph No. 7 of this permit) at any time as (s)he within his/her discretion deems necessary in order to monitor for, prevent and abate groundwater pollution;
8. Discharge of any groundwater that infiltrates into the mining pit in Section 25, T1S, R4E1M off the mining pit site is and shall be prohibited;
9. Notwithstanding any language in the "M&M Plan" regarding use or pumping of groundwater from the mining pit, and notwithstanding any other provision of this permit, use of groundwater from the mining pit in Section 25, T1S, R4E1M is not authorized and is prohibited unless and until it is duly permitted;
10. If and when this permit is revalidated, it shall be subject to modification. Before revalidation for another one-year term, the Board shall determine what if any further conditions are necessary to assure that the permittee's use will not likely degrade or interfere with springs or streams emanating from the Arbuckle-Simpson groundwater basin. Such modification and conditions may include but shall not be limited to a suspension of the permit, and a reduction or increase in the amount or rate of groundwater. As part of any revalidation, the Board may evaluate any pertinent data or findings resulting from the permittee's implementation of the M & M Plan, the ongoing hydrologic study of the Arbuckle-Simpson groundwater basin, or any other appropriate source;
11. Notwithstanding any revalidation of this temporary permit or conversion of this temporary permit to a regular permit, the authorization to withdraw groundwater shall terminate at the same time as the permittee's groundwater lease for the dedicated land terminates. If and whenever such lease is terminated, the permittee shall give written notice thereof to the Board no later than thirty (30) days after the effective date termination of the lease; and
12. Water use reports mailed to the permit holder during January of each year must be completed and returned to the Board within 30 days of receipt.

Acceptance of this permit shall be acknowledgement and agreement that the permit holder will comply with all terms, conditions, and limitations required by Oklahoma law including the Oklahoma Water Resources Board rules concerning the taking and use of fresh groundwater and will allow Oklahoma Water Resources Board staff to enter the property described in this permit during reasonable business hours for well and water use inspections.

DATE: January 28, 2015

OKLAHOMA WATER RESOURCES BOARD



J.D. Strong, Executive Director

Appendix D (cont'd)
Water Permits

Aug. 10, 2007 10:44AM Oklahoma Water Resources Board

No. 0708 P. 3

OKLAHOMA WATER RESOURCES BOARD
TEMPORARY PERMIT TO TAKE AND USE GROUNDWATER

Permit No: 2006-601A
Date of Filing: October 18, 2006
County: Johnston
Groundwater Basin: Arkosols-Seminole Group

THE OKLAHOMA WATER RESOURCES BOARD hereby issues temporary groundwater permit number 2006-601A, in the name of Meridia A Cement Company, L.P. whose address is 3300 IH-10 West Suite 606, San Antonio, TX 78216. The permit authorizes the taking and use of 105.39 acre-feet of groundwater per calendar year from one well located in the NE1/4NW1/4 of Section 1, T28, R46E1M for the purpose of mining. The land dedicated to this permit totals 268.83 acres and is located as follows: 14.85 ac. in the E2W1/4 of Section 25, T18, R46E1M; 126.56 ac. in the N2 of Section 1, T28, R46E1M; and 127.42 ac. in the S2 of Section 6, T28, R46E1M; all in Johnston County.

This allocation is subject to the following terms, conditions and limitations:

1. This permit shall lapse unless it is duly revalidated annually by the permit holder. Timely return of the completed water use report, which is mailed by the Board in January of each year; revalidates the temporary permit for that year;
2. This permit shall lapse upon issuance of a regular permit after completion by the user of the applicable groundwater basin study and determination of the maximum annual yield of the basin;
3. Changes in well locations from those listed above must be approved by the Board and may, in the future, be subject to well spacing orders of the Board;
4. If a proposed well is not drilled and completed within one year of approval of the well location, groundwater will no longer be authorized to be withdrawn from that location;
5. Prior to the withdrawal of any groundwater, the permittee shall install and maintain a meter device that will accurately measure the volume and rate of groundwater withdrawals on a continuous basis, and the reporting of such data to the Board on a monthly basis with such reporting being kept at public record; and
6. Water use reports mailed to the permit holder during January of each year shall be completed and returned to the Board within 30 days.

All other terms and provisions set forth in the application shall be incorporated and made a part of this permit.

Acceptance of this permit shall be acknowledgment and agreement that the permit holder will comply with all the terms, conditions and limitations required by Oklahoma law including the Oklahoma Water Resources Board rules concerning the taking and use of fresh groundwater and will allow Oklahoma Water Resources Board staff to enter the property described in this permit during reasonable business hours for well and water use inspections.

Date permit approved: June 12, 2007

OKLAHOMA WATER RESOURCES BOARD


Duane A. Smith, Executive Director

\\VOR\GTS\PERMITS\2007\06\07\AppendixD.doc

Appendix D (cont'd) Water Permits

OKLAHOMA WATER RESOURCES BOARD TEMPORARY PERMIT TO TAKE AND USE GROUNDWATER

Permit No.: 2006-601B

Date of Filing: October 18, 2006

County: Johnston

Groundwater Basins: One or more major and/or minor groundwater basins located outside the Arbuckle Simpson outcrop area including but not limited to the following: Deese Group; Atoke/Wapanuka Formations; Springer Formation; Cancy Shale; Sycamore Limestone; Weldon Limestone; Woodford Shale; Hunton Group; Sylvan Shale; Viola Group; and/or Arbuckle/Simpson Group

THE OKLAHOMA WATER RESOURCES BOARD hereby issues temporary ground water permit number 2006-601B in the name of Meridian Aggregates Company, L.P., whose address is 2200 IH-10 West Side #200, San Antonio, TX 78238. The permit authorizes the taking and use of 215.13 acre-feet of groundwater per calendar year from one well located in the SW SW of Section 1, T2S, R4E1M for the purpose of mining - aggregate processing plant. The land dedicated to this permit totals 550.03 acres and is located as follows: 270.9 acs. in Section 1, 99.91 acs. in the N2 N2 of Section 1 and 174.44 acs. in the N2 of Section 12, T2S, R4E1M, and 4.78 acs. in the SW SW of Section 6, T2S, R51M; all in Johnston County.

This allocation is subject to the following terms, conditions and limitations:

1. This permit shall lapse unless it is duly revalidated annually by the permit holder. Timely return of the completed water use report, which is mailed by the Board in January of each year, revalidates the temporary permit for that year;
2. This permit shall lapse upon issuance of a regular permit after completion by the board of the applicable groundwater basin study and determination of the maximum annual yield of the basin;
3. Changes in well locations from those listed above must be approved by the Board and may, in the future, be subject to well spacing orders of the Board;
4. If a proposed well is not drilled and completed within one year of approval of the well location, groundwater will no longer be authorized to be withdrawn from that location;
5. Prior to the withdrawal of any groundwater, the permittee shall install and maintain a meter device that will accurately measure the volume and rate of groundwater withdrawals on a continuous basis, and the reporting of such data to the Board on a monthly basis with such reporting being kept as public record; and
6. Water use reports mailed to the permit holder during January of each year shall be completed and returned to the Board within 30 days.

All other terms and provisions set forth in the application shall be incorporated and made a part of this permit.

Acceptance of this permit shall be acknowledgment and agreement that the permit holder will comply with all the terms, conditions and limitations required by Oklahoma law including the Oklahoma Water Resources Board rules concerning the taking and use of fresh groundwater and will allow Oklahoma Water Resources Board staff to enter the property described in this permit during reasonable business hours for well and water use inspections.

Date permit approved: June 12, 2007

OKLAHOMA WATER RESOURCES BOARD


Duane A. Smith, Executive Director

Appendix D (cont'd) Water Permits

OKLAHOMA WATER RESOURCES BOARD REGULAR PERMIT TO APPROPRIATE STREAM WATER

Stream System: Lower Washita River
Number: SB-1-B-1
County: Johnston
Permit No.: 2004-093
Date Filed: October 26, 2004

The OKLAHOMA WATER RESOURCES BOARD hereby issues regular stream water permit number 2004-093 in the name of Murdiau Associates Company, L.P. whose address is 11467 Huebner Road, Suite 300, San Antonio, TX 78230. The regular permit authorizes the taking and use of 1,425 acre-feet of water per calendar year for polishing crushed and broken stone. The operations will be located on 700 acres described as follows: 4.1 acs. in Section 25 and 288 acs. in the W2 of Section 26, all in T1S, R4E1W, Johnston County. The water is to be diverted from one point of diversion on Hill Creek in the NE SE SW of Section 34, T1S, R4E1W, Johnston County at a rate not to exceed 2,200 gallons per minute.

The permit holder is authorized to proceed with the construction of the project in compliance with the application and permit, and subject to the following terms, conditions and limitations:

1. The use of water authorized under this permit shall not interfere with domestic or existing agricultural uses;
2. Construction on the proposed project must be started by the 14th day of December, 2006, and the permit holder has until the 14th day of December, 2011, to complete the project;
3. Upon completion of the project, permit holder must file with the Oklahoma Water Resources Board a Notice of Completion of Project;
4. Water use reports mailed to the permit holder during January of each year shall be completed and returned to the Board within 30 days. Willful failure to complete and return the report with the fee maintenance fee may be considered by the Board as nonuse of water under this permit and
5. The authorized amount of water is subject to forfeiture and must be beneficially used in a calendar year within any seven continuous year period to retain the authorized amount.

Acceptance of this permit shall be an acknowledgment and agreement that permit holder will comply with all the terms, conditions and limitations embodied in this permit and all applicable laws of the State of Oklahoma and Rules, Regulations and Modes of Procedure of the Board.

Date approved December 14, 2004

OKLAHOMA WATER RESOURCES BOARD


Diana A. Smith, Executive Director

SWTR-RTS/PERM TS-20020106-0182.p.30:

Appendix D
Stream Water Permit

**OKLAHOMA WATER RESOURCES BOARD
PERMIT TO APPROPRIATE STREAM WATER**

Stream System: Lower Washita River Number: 1-8-1 County: Johnston
Permit Number: 2004-33 Date Filed: October 26, 2004
Date Issued: December 14, 2004

The OKLAHOMA WATER RESOURCES BOARD hereby recognizes **Regular Stream Water Permit Number 2004-33** to reflect a change of ownership to **Vulcan Construction Materials, LP** whose address is PO Box 791550, San Antonio TX 78279. The stream water right authorizes the taking and use of 1,425 acre-feet of water per calendar year for mining crushed and broken stone. The operations will be located on 700 acres of land located in the following: 411 acs in Sec 25 and 289 acs in the W2 of Sec 36, T1S, R4E1M. The water is to be diverted from Mill Creek, located in the NE SE SW of Sec 34, T1S, R4E1M, at a rate not to exceed 2,000 gallons per minute.


The permit holder is subject to the following terms, conditions and limitations.

1. The use of water authorized under this permit shall not interfere with domestic or existing appropriative uses;
2. Water use reports mailed to the permit holder during January of each year must be completed and returned to the Board within 30 days of receipt. Willful failure to complete and return the report with the file maintenance fee may be considered by the Board as nonuse of water under this permit;
3. The authorized amount of water is subject to forfeiture and must be beneficially used in a calendar year within any seven continuous year period to retain the authorized amount;
4. Water released for navigation purposes pursuant to project operations adopted by the United States shall not be diverted.

Acceptance of this permit shall be an acknowledgment and agreement that permit holder will comply with all the terms, conditions and limitations embodied in this permit and all applicable laws of the State of Oklahoma and Rules, Regulations and Modes of Procedure of the Board.

Dated approved: January 28, 2015

OKLAHOMA WATER RESOURCES BOARD



J.D. Strong, Executive Director

Appendix E Infiltration Tests

Infiltration Pond

Test Date	12/17/2012
	12/17/12
Start Time	10:15 am
	12/18/12
Stop Time	10:15 am
Test Duration, hrs.	24.0
Start Level, in.	15
Stop Level, in.	8.25
Water Level Change, in.	6.75
Pond Width, ft.	300
Pond Length, ft.	600
Total Volume Change, ac-ft	2.324
Evaporation, in.	0.079
Evaporation Loss, Ac-ft	0.027
Net Volume Change, ac-ft.	2.297
Net Rate of Change, ac-ft/day	2.297

Settling Cell FO2 East

Test Date	12/15/2012
	12/15/12
Start Time	7:30am
	12/16/12
Stop Time	7:30am
Test Duration, hrs.	24.0
Start Level	24
Stop Level	21.375
Water Level Change, in.	2.625
Pond Width, ft.	50
Pond Length, ft.	330
Total Volume Change, ac-ft	0.083
Evaporation, in.	0.03
Evaporation Loss, Ac-ft	0.001
Net Volume Change, ac-ft.	0.082
Net Rate of Change, ac-ft/day	0.082

Settling Cell FO2 West

Test Date	5/28/2013
	5/28/13
Start Time	4:30pm
	5/29/13
Stop Time	7:30am
Test Duration, hrs.	15.0
Start Level	24
Stop Level	19.75
Water Level Change, in.	4.25
Pond Width, ft.	50
Pond Length, ft.	350
Total Volume Change, ac-ft	0.142
Evaporation, in.	0.09
Evaporation Loss, Ac-ft	0.003
Net Volume Change, ac-ft.	0.139
Net Rate of Change, ac-ft/day	0.223

Settling Cell FO3/FO4

Test Date	12/15/2012
	12/15/12
Start Time	7:30am
	12/16/12
Stop Time	7:30am
Test Duration, hrs.	24.0
Start Level	24
Stop Level	23.75
Water Level Change, in.	0.25
Pond Width, ft.	200
Pond Length, ft.	435
Total Volume Change, ac-ft	0.042
Evaporation, in.	0.09
Evaporation Loss, Ac-ft	0.015
Net Volume Change, ac-ft.	0.027
Net Rate of Change, ac-ft/day	0.027

North Infiltration Area

Test Date	1/31/2013
	1/30/12
Start Time	4:00pm
	1/31/13
Stop Time	8:00am
Test Duration, hrs.	16.0
Start Level	24
Stop Level	20.5
Water Level Change, in.	3.5
Pond Width, ft.	30
Pond Length, ft.	600
Total Volume Change, ac-ft	0.121
Evaporation, in.	0.03
Evaporation Loss, Ac-ft	0.001
Net Volume Change, ac-ft.	0.119
Net Rate of Change, ac-ft/day	0.179

South Infiltration Area

Test Date	12/29/2012
	12/29/12
Start Time	9:00am
	12/30/12
Stop Time	9:00am
Test Duration, hrs.	24
Start Level	24
Stop Level	23
Water Level Change, in.	1
Pond Width, ft.	300
Pond Length, ft.	600
Total Volume Change, ac-ft	0.344
Evaporation, in.	0.03
Evaporation Loss, Ac-ft	0.010
Net Volume Change, ac-ft.	0.334
Net Rate of Change, ac-ft/day	0.334

Appendix F Precipitation, Evaporation, and Storm water Runoff Data

January Precipitation/Evaporation Data				
PIT RUNOFF ASSUMPTIONS				
Hydrologic Soil Group			D	
Land Use			"gravel road"	
AMC Condition			II (ave)	
CN (pit fringe)			88	area draining into pit
CN (pit)			100	area with direct interception
S (pit fringe)			1.363636364	area draining into pit
S (pit)			0	area with direct interception
Pit - Direct Interception (>95 ft deep)			53.91	subject to refinement
Pit fringe (area drains to pit)			122.04	subject to refinement
Drainage to Pit (total area)			175.95	subject to refinement
		Quarry area	Fringe area	Daily
Date	Precip, in.	Runoff, in.	Runoff, in.	Evaporation, in.
1-Jan	0.01	0.01	0.00	0.023
2-Jan		0.00	0.00	0.042
3-Jan		0.00	0.00	0.059
4-Jan		0.00	0.00	0.042
5-Jan		0.00	0.00	0.059
6-Jan		0.00	0.00	0.097
7-Jan		0.00	0.00	0.071
8-Jan	0.27	0.27	0.00	0.039
9-Jan	0.45	0.45	0.00	0.028
10-Jan	0.12	0.12	0.00	0.054
11-Jan		0.00	0.00	0.113
12-Jan	0.23	0.23	0.00	0.041
13-Jan		0.00	0.00	0.071
14-Jan		0.00	0.00	0.077
15-Jan		0.00	0.00	0.037
16-Jan		0.00	0.00	0.079
17-Jan		0.00	0.00	0.101
18-Jan		0.00	0.00	0.1
19-Jan		0.00	0.00	0.092
20-Jan		0.00	0.00	0.09
21-Jan		0.00	0.00	0.103
22-Jan		0.00	0.00	0.084
23-Jan		0.00	0.00	0.096
24-Jan		0.00	0.00	0.053
25-Jan		0.00	0.00	0.071
26-Jan	0.01	0.01	0.00	0.02
27-Jan		0.00	0.00	0.022
28-Jan		0.00	0.00	0.077
29-Jan		0.00	0.00	0.047
30-Jan		0.00	0.00	0.106
31-Jan		0.00	0.00	0.129
		1.09	0.00	2.12
	Volume, ac-ft	4.90	0.00	
	Total Vol, ac-ft	4.90		

