

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

M478229027

FACILITY: EQ-Belleville (MDWTP, WER, WDI (Site 1&2, FOW)		SRN / ID: M4782
LOCATION: 49350 N. I 94 SERVICE DR, BELLEVILLE		DISTRICT: Detroit
CITY: BELLEVILLE		COUNTY: WAYNE
CONTACT: Sylwia Scott, Environmental Manager		ACTIVITY DATE: 04/29/2015
STAFF: C. Nazaret Sandoval	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY 2015 Targeted Inspection - The inspection was conducted in two-days. Day 1 - April 2, 2105: Evaluation of compliance with the monitoring and recordkeeping special conditions specified on MI-ROP-M4782-2010a (Emphasis on Section 1 of ROP). Evaluation/discussion of some of the back-up calculations submitted with the 2014 MAERS report. Day 2 - April 29, 2015: Facility tour and evaluation of compliance with special conditions of ROP Section 2.		
RESOLVED COMPLAINTS:		

SNR: M4782
SOURCE NAME: EQ – US Ecology at Belleville
FACILITY ADDRESS: 49350 North I 94 Service Drive, Belleville, Michigan
INSPECTOR: Nazaret Sandoval, AQD – Detroit District Office
INSPECTION DATES: 4/2/15 and 4/29/15
EQ MAIN CONTACT: Sylwia Scott, Environmental Manager (734.699.6294)
Email: Sylwia.Scott@usecology.com

The purpose of the inspection was to evaluate the facility's compliance with respect to the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), and the conditions of Renewable Operating Permit (ROP) number MI-ROP-M4782-2010a.

EQ Belleville site consist of three major components, each comprising a section of the ROP. This report summarizes the on-site observations and the evaluation of compliance with the terms and conditions of the ROP with emphasis in Section 1. Sections 2 and 3 will be discussed further in a separate report as part of the next fiscal year inspection, which concurs with the ROP renewal.

The report is divided into five segments:

1. Facility Description
2. Regulatory applicability
3. Inspection Narrative
4. Compliance Evaluation
5. Final Compliance Determination

Each segment is described in the following paragraphs.

1. FACILITY DESCRIPTION

The entire facility covers approximately 0.8 square mile, stretched out along the North Interstate 94 Service Drive between Beck Road and Rawsonville Rd. Directly north of the facility is Willow Run Airport. An industrial area lies to the west which includes a wastewater treatment facility and an asphalt plant. Directly south is a rest area and the I-94 freeway, along the south side of which are numerous apartment complexes. Belleville Lake is approximately 300 meters beyond that. A residential neighborhood lies to the East.

Michigan Disposal Waste Treatment Plant (MDWTP)-ROP SECTION 1

MDWTP is a hazardous and non-hazardous waste processing facility. Hazardous waste generated off-site is treated to meet land disposal restrictions and buried in a hazardous waste landfill or sent to a Type II landfill, if permissible. The facility operates five days per week, 24 hours per day. The facility processes bulk liquid waste, bulk solid waste, and containerized waste. The waste is processed in a two separate building identified as East and West. The buildings are equipped to handle different waste materials, consisting on waste and reagent storage areas, liquid waste tanks and air pollution control devices.

Wayne Energy Recovery (WER) – ROP SECTION 2

There are four landfill gas-fired spark ignition reciprocating internal combustion engines (RICE), which are used to generate electricity for the power grid. Typically, two or three of the engines operate 24 hours per day seven days per week whenever possible. As of May 2013 one of the four engines has been restricted to be utilized as an emergency "only" engine.

Wayne Disposal Inc. (WDI) - ROP SECTION 3

WDI is a hazardous and non-hazardous waste processing facility that includes a series of closed municipal solid waste landfills that once received municipal solid waste and hazardous waste (prior to RCRA), and an active hazardous waste landfill. There is no active disposal at any of the municipal solid waste landfill cells and a passive landfill gas collection system operates at those closed sites.

2. REGULATORY APPLICABILITY

This facility is a Major source of NO_x, HAPs and CO and a Synthetic Minor for VOCs. In addition to the requirements of Title V of the Clean Air Act, the following MACT standards are applicable to the operations identified below:

MDWTP-The operations at the East and West Bay are subject to the following National Emissions Standards for Hazardous Air Pollutants (NESHAP) standards: 40 CFR Part 63 Subpart DD -Offsite Waste and Recovery Operations; 40 CFR Part 61 Subpart FF- Benzene Waste Operations; 40 CFR Part 63 subpart M – Asbestos; and Subpart DDDDD: Industrial, Commercial and Institutional Boilers and Process Heaters (Boiler MACT). With the exception of NESHAP Subpart DDDDD, all the other applicable requirements for the listed NESHAP s are incorporated into the current ROP. The Boiler MACT will be added during the ROP renewal process. The treatment bays (FG_EAST and FG_WEST) are subject to Compliance Assurance Monitoring (CAM): FG_EAST for particulate matter and VOC; and FG_WEST for particulate matter only. Section 2 and 3 are not subject to CAM.

Wayne Energy Recovery (WER)-The engines are subject to 40 CFR Part 63 subpart AAAA, NESHAP for Municipal Solid Waste Landfills, as well as 40 CFR Part 62 (The Federal Plan) subpart GGG as control equipment for the municipal solid waste landfills. Having accepted a limit of 190 tons/year for NO_x emissions, the prevention of significant deterioration (PSD) regulations under Michigan Part 18 rules do not apply. As of October 19, 2013, Engines 2 and 5, which are less than 500 BHP, are subject to the RICE MACT under 40 CFR Part 63 Subpart ZZZZ. Engine 3 (the emergency engine) is subject to the requirements of 63.6590(a) (1). The current ROP does not include the RICE requirements for the cited engines, but they will be added to Section 2 of the ROP during renewal. Engine 4 is not subject to the RICE MACT requirements pursuant to 63.6590 (b) (3) (v), because the brake horsepower is above 500 hp. None of the emission units

at WER are subject to CAM.

Wayne Disposal (WDI) - Four landfills are located at the site: Old Wayne, FONS, Site I, and Site II. The landfills have a design capacity greater than 2.5 million Mg and were not modified after May 30, 1991, so they are subject to 40 CFR Part 62 (The Federal Plan) subpart GGG. Also, the landfills are subject to 40 CFR Part 61 Subpart M, the asbestos NESHAP. Old Wayne, FONS and Site I; all have passive gas control systems consisting of continuously sparking solar flares. Site II is subject to the active landfill gas collection requirements of subpart GGG, due to having produced >50 Mg of NMOC per year. The AQD has no jurisdiction over landfills subject to the Federal Plan, as EPA has not delegated authority to Michigan. A formal request for delegation was submitted to USEPA Region V, but no determination has been made.

3. INSPECTION NARRATIVE

The inspection was conducted in two separate days, 4/2/15 and 4/29/15. The first day of inspection included the evaluation and general discussion of the permit conditions and requirements cited on Section 1 and Section 2 of the ROP. AQD also evaluated a portion of the 2014 MAERS report. We discussed some of the backup calculations and the methodology used by the facility to estimate their emissions. The facility records were requested and some of the records were observed / reviewed over the computer system at the facility. Parts of the records were handed out during the inspection days and others were submitted by the facility via email.

The tour of the facility was conducted during the second visit, on April 29, 2015. The tour started at the MDWTP, East & West Treatment buildings (FGEAST) & (FGWEST), and ended with the inspection of the Power Engine House (WER). The landfills gas site (Wayne Disposal) was not inspected because the State does not have delegation over the landfills. On April 29, 2015 the discussions were mostly focused on the equipment and the operations taking place at the facility. Records pertaining the operational parameters and preventive maintenance conditions required by Sections I and II of the ROP for the equipment located at MDWTP and WER were also evaluated.

Sylwia Scott led the inspection. Mr. Paul Haratyk, Shift Supervisor of the MDWTP joined us during the walk-through at the East & West Treatment buildings. Haratyk explained the process and answered most of the question related to the MDWTP. Cedric Gibson, the WER Manager, accompanied us during the tour at the Power House and answered the questions pertaining the engine operations and landfill gas conditions.

Michigan Disposal Waste Treatment Plant (MDWTP)-ROP SECTION 1

FG EAST

The East Side waste treatment processes consist of the following equipment/emission units and control equipment:

There is a 40,000 gallon sludge tank (EUSLUDGETANK12) located between the west and east treatment bays, and four waste storage and treatment tanks E, F, G, and H installed during the period from 7/1/91 to 6/1/97. The tanks are grouped under emission unit EUSTORAGETANK1.

A pug mill (EUPUGMILL1) was part of the equipment installed at the treatment building and it was used to blend reagents with waste and then convey the mixture into the main treatment area. They no longer need to mix reagents because all mixing occurs in the treatment tanks. Therefore, the pug mill was removed on August 2013 and only the screw conveyor is used for the transport of the waste to the treatment tanks.

Pollution control at FG_EAST includes the following equipment sequence: 1) a baghouse dust collector; 2) a regenerative thermal oxidizer (RTO); 3) a sodium hydroxide packed bed wet scrubber.

The operations occurring at FG_EAST can be described as follows:

Waste is received via trucks and is transferred to the treatment tanks via one of three methods:

- Bulk liquid non-hazardous waste can be off-loaded into Tank 12. The waste contained in Tank 12 is then transferred and conveyed (via screw conveyor) to one of the treatment tanks.
- Bulk solid waste is brought into one the chemical fixation/stabilization process building by truck and dumped into one of the treatment tanks.
- Containerized waste (drums) is off-loaded to the waste staging area. After waste is sampled and tested for acceptance/compatibility, the waste is transferred to one of the treatment tanks.

Once the waste has been transferred to one of the treatment tanks, it is stabilized by adding varying amounts of oxidant (typically sodium hypochlorite) and dolomitic kiln dust.

The chemical reactions perform several functions: a) pH adjustment for acidic/basic materials, b) exothermic heat to vaporize the more volatile VOC (which then is controlled by the thermal oxidizer in the East side treatment bay), c) locking the remaining hazardous constituents into the waste mass to ensure they don't leach out in the landfill, and d) the physical solidification of the material so that it meets land disposal criteria. After the reactions, the material is sampled. If the confirmatory sampling demonstrates that the material is properly treated, and the waste meets land disposal restriction criteria; the excavator removes the material from the tanks into a truck, which takes the material to a transfer station. Finally, the waste is deposited by dedicated equipment to the active cell of the landfill.

During the walk-through as we came close to the RTO combustion chamber, I made a comment about a problem I had observed during the stack test that took place on July 2012. The valves controlling the opening /closure of the air that feeds the combustion chamber had some issues during the initial portion of the stack test. Mr. Haratyk indicated that they have changed the preventive maintenance procedures to assure a proper operation of the valves.

Under the FG_EAST baghouse, I observed that the rotary valves were operational. The baghouse fines disposal system utilizes wheeled bins instead of bags. No housekeeping issues were observed under the baghouse. No visible emissions were observed from the exhaust stack.

FG WEST - The west treatment bay, contains a 40,000 gallon sludge tank (EUSLUDGETANK11) located between the west and east treatment bays; and four waste storage and treatment tanks designated as A, B, C, and D grouped under emission unit EUSTORAGETANK2. The equipment is controlled by a baghouse dust collector. This process does not treat waste subject to 40 CFR Part 63 Subpart DD. In other words only wastes with minimal VOC content (<500 ppm on a monthly average basis, maximum of 0.5% by weight daily average) are permitted to be treated at this side of the plant. In the treatment building, it was observed that the pug mill (EUPUGMILL2) was still in place, but I was told that it has been inoperative for a long time. They planned to take it apart in the near future for the same reason explained above for the East building. Likewise, a conveyor is used for transferring waste to the treatment tanks. The area under the baghouse was free of debris. The bay doors were close at the time of inspection.

FGLIQWASTETKS - Four 20,000 gallon tanks (Tanks 16, 17, 18 and 19) are used as needed to

hold various reagents or liquid wastes. The tanks are housed at an area located to the east of the East Treatment Building toward the north corner. The liquid wastes have generally consisted of trench water or landfill leachate.

FGSILOS – Each building (east and west) has three identical silos. Silos 1 through 3 serve the west side, and silos 4 through 6 serve the east side. Trucks offloading hook up to the silos and have a blower on the truck that is used to blow the kiln dust into the silos. The silos store kiln dust for use in stabilizing the wastes. At the time of inspection the silos were not being filled. Therefore, visible emission observations could not be made. However, it looks like this is an air tight enclosed system and we should expect minimum dust emissions while loading silos.

FGTMTFACILITY - In summary, the waste treatment facility (MDWTP) includes all equipment in the east and west side processes, the reagent silos, the liquid waste storage tanks and the North, East, and Southeast container storage area. For the purpose of the ROP all these emission units are grouped under a flexible group identified as FGTMTFACILITY

According to the ROP, except for the waste and storage tanks A to H (installed between 7/1/91 and 6/1/97) the rest of the equipment at MDWTP was installed on July 1991.

The pollution control devices for each treatment process and/or equipment are as follows:

- East side treatment process: Baghouse dust collector, RTO, and wet scrubber in series.
- West side treatment process: Baghouse dust collector.
- Reagent silos: Each treatment reagent and waste silo has its own baghouse.
- Liquid waste storage tanks: The tanks are controlled by two shared carbon adsorption canisters in series.

Other equipment and dismantled units:

FGCOLDCLEANERS - Only one cold cleaner unit remains on site in the vehicle maintenance building. The cold cleaner is supplied by VESCO and employs mineral spirits. We did not go to the location of the cold cleaners.

FGRULE290 (EUDRUMSTORAGE) - A small tank-farm and waste staging area is located to the east of the east bay, south of the location where the liquid waste tanks are situated.

The north container storage area is inside the treatment bay, on the north side of the building. Here, drums are stored in preparation for treatment, as well as some dry reagents. The area is equipped with a ventilation system which is ducted to the west side baghouse. In the ROP, the North, East and Southeast Container Storage Area are all grouped under emission unit EUDRUMSTORAGE

FGTDU – In late 2009, EQ began the installation of a thermal desorption unit (TDU) process for recovering oils from refinery wastes, which were primarily solid in form. The byproducts of the oil recovery were VOCs, waste water and solids. The facility began trial operation in 2010, and it was extensively modified soon after. EQ decided to cease the TDU operations in October 2011. The equipment was dismantled on July 2012. The area is currently use for storage.

4. COMPLIANCE EVALUATION

The following is an evaluation of the facility's compliance with the Special Conditions (SC) cited on MI-ROP-M4782-2010a for the emission units (EUs) and flexible groups (FG) listed under Sections I of the ROP. For compliance evaluation we examined the records for year 2014 and

the pollutant emission rates results from the last stack testing conducted at the facility. For simplicity, some of the permit conditions have been restated:

FG EAST

I. EMISSION LIMIT(S)

IN COMPLIANCE

The following table shows that the facility appears to be in compliance with the limits specified for FG_EAST. Test results and records are cited on the last column.

Pollutant	Limit	Time Period/Method/ Operating Scenario	Records for 2014 or Stack Test of 7/25/12
1. VOC	22.85 lb/hr	Stack testing every five years	0.34 (RTO Avg. Eff. 98.7%)
2. VOC	47.52 tpy	12-month rolling time period*	1.2418 max on April 2014
3. Methylene chloride	14.92 lb/hr	Stack testing every five years	0.01
4. Benzene	0.71 lb/hr		0.02
5. 1,1,2,2-Tetrachloroethane	0.16 lb/hr		0.01
6. Carbon tetrachloride	0.28 lb/hr		0.01
7. Chloroform	3.02 lb/hr		0.01
8. Trichloroethene	4.52 lb/hr		0.00
9. Tetrachloroethene	12.7 lb/hr		0.01
10. Hydrogen chloride	28.4 lb/hr		0.00
11. PM (Instantaneous emissions)	0.028 lb per 1,000 lbs of exhaust air	Monthly records Per Appendix 7B.-S1	0.00476 (see comment under section VI. 9)
12. PM-10 (Cumulative emissions)	1.9 lb/hr	Monthly records Per Appendix 7B.-S1	0.471 (see comment under section VI. 9)
13. PM-10 (Cumulative emissions)	4.0 tpy	12-month rolling time period*, per Appendix 7B.- S1	2.065 (see comment under section VI. 9)

* Tons per year (tpy) shall be based upon a 12-month rolling time period as determined at the end of each calendar month.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Monitoring/ Testing Method	COMPLIANCE
1.VOC in waste	Maximum of 2% by weight for hazardous waste	Daily average for waste accepted for treatment	Records are maintained following NESHAP Subpart DD procedures	YES According to the records the facility is in compliance with the cited limits (For details refer to VI.7 below)
2.VOC in waste	Maximum of 20% by weight for nonhazardous waste			

III. PROCESS/OPERATIONAL RESTRICTION(S)

IN COMPLIANCE

During the site tour on April 29, 2015 we stopped at the control room located by the East Building. The screen shot taken at 9:05 AM (per clock on the screen) showed the process / operational conditions were showed at the screen depicted the process flow diagram illustrating the prevailing at the moment. The recorded values are cited below. All the values are 5-min averages. The operational parameters cited in SCs 4, 5, 8 and 9, are monitored and recorded during the process operations at the EAST treatment building. Random examination of the records for year 2014 was conducted during the first day of the inspection (April 2, 2015). In addition, a sample of a daily record with the operational parameters monitored for 4/29/15 was handed out during the inspection. The evaluation suggests that the facility is operating in compliance with the operational restrictions required by the permit conditions specified below.

SC 1. During normal operation the air flow through FG_EAST shall be maintained within 19,500 cfm and 26,400 cfm. Normal operation is defined in the ROP under SC III.1

At the time of the visit on 4/29/15 the air flow was 21,663 cfm. Air flow records for year 2014 appeared to be within the permit limits, except for a few deviations reported in April 2014 due to software issues that were corrected.

SC 2. The permittee shall operate the baghouse, thermal oxidizer and caustic scrubber and maintain negative static pressure in the waste treatment building during normal operation.

All control devices are used during normal operation. Negative static pressures are maintained at the east waste treatment building. This condition is tested annually. For year 2014, the verification was conducted on 10/29/14. (A copy of the report with results was provided during the visit on 4/29/15 and it is attached to the hard copy of this document). During the walkthrough it was observed that the overhead doors appeared to be in good condition and were functioning properly.

SC 3. The permittee shall not operate FG_EAST, unless the baghouse, thermal oxidizer and caustic scrubber are installed and operated properly.

It appears as if all control devices were in operation at the time of the facility tour.

SC 4. The permittee shall not operate FG_EAST, unless the treatment building baghouse pressure drop is maintained between 1.5 and 8 inches of water column.

The value of the baghouse pressure drop was not capture on the screen-shot taken on 4/29/15. During the preparation of this report I learned that earlier that day, before treating any waste, the operators did some adjustments at the Air Handling Unit and the baghouse was put online after completing the tunings.

SC 5. The permittee shall not operate FG_EAST, unless the thermal oxidizer maintains a minimum temperature of 1,500°F.

At the time of the visit on 4/29/15 the RTO temperature was 1581 °F. Semiannual reports for year 2014 did not report deviations from the minimum required temperature.

SC 6. The permittee shall maintain a VOC capture efficiency of 100 percent in the FG_EAST exhaust system, as determined in accordance with SC V.2.

Refer to SC V.2 below for demonstration of compliance.

SC 7. The permittee shall not process waste with a VOC concentration greater than 500 ppm in FG_EAST unless the destruction efficiency of the thermal oxidizer (RTO) is a minimum of 95%.

The most recent testing of the RTO to determine the VOC destruction efficiency was conducted on July 25, 2012. Three, 1-hr tests gave an average destruction efficiency of 98.7 %. The report with test results is kept at the facility files and at AQD EQ files

SC 8. The permittee shall not operate FG_EAST unless the caustic scrubber maintains a minimum pH of 7.3.

At the time of the visit on 4/29/15 the pH was 8.18. During year 2014 the facility operated at or above the minimum pH except for two reported deviations. For details see the attached deviation report evaluation prepared by AQD.

SC 9. The permittee shall not operate FG_EAST unless the liquid flow rate of the caustic scrubber is maintained between 225 and 350 gallons per minute.

At the time of the visit on 4/29/15 the flow was 236 gallons per minute. During year 2014 the facility operated within the required range, except for one deviation on October.

SC 10. The permittee shall not have more than one waste treatment process building overhead door open at a time.

This condition was verified during the facility tour.

IV. DESIGN/EQUIPMENT PARAMETER(S)

IN COMPLIANCE

SC 1 to SC 3 and SC 5 & 6 - The permittee shall install, calibrate, maintain and operate in a satisfactory manner the monitoring devices to monitor: the air flow from FG_EAST; the pressure drop of the treatment building baghouse; the combustion chamber temperature of the thermal oxidizer (RTO); the pH of the caustic scrubber and the liquid flow rate of the caustic scrubber. The parameters shall be monitored in a continuous basis, and record five minute block averages of the monitored parameters.

Here is the evaluation of compliance for the above SCs:

The parameters are monitored and recorded in accordance with the permit conditions. The device calibration for year 2015 was completed on May 16, 2015. Some of the operational parameters were verified by reading the computer screen in the control room during the facility tour. The monitoring devices and the frequency of calibration are both cited in the following paragraphs.

SC 1. The airflow meter at the east treatment building is a Pilot Tube Style flow meter fitted with an ABB 2600T pressure transmitter, calibrated bi-annually.

SC 2. The east baghouse has an ABB 2600T series pressure transmitter. Calibration is bi-annual.

SC 3. The RTO has type k thermocouples that are replaced annually.

SC 4. The thermal oxidizer shall be designed to maintain a minimum retention time of 0.4 seconds.

The manufacturer guaranteed a minimum retention time of 0.4 seconds.

SC 5. The scrubber pH is monitored with a Bailey pH sensor calibrated bi-annually.

SC 6. The scrubber liquid flow is measured by an ABB electro-magnetic flow meter. They drain the scrubber tank and then time how long it takes to refill the tank (of known volume). This verifies that the scrubber pump is actually pumping out 225 gallons per minute (as a minimum)

SC 7. The permittee shall install, maintain and operate limit switches in all overhead doors, so as to restrict the maximum opening heights to 20 feet except as needed for vehicle or equipment ingress and egress.

East overhead doors incorporate limit switches to control opening height. They are maintained by lubrication on a quarterly basis, verifying the opening height and bottom seal - .

SC 8. Sludge feed and storage tank No. 12 (EUSLUDGETANK12) shall be vented into the FG_EAST waste treatment process building.

This condition was verified during the tour of the facility - .

V. TESTING/SAMPLING

IN COMPLIANCE

Records shall be maintained on file for a period of 5 years

SC 1. Verification of pollutant emission rates from FG_EAST specified in SC I.1 through I.10 and the destruction efficiency of the thermal oxidizer shall be conducted by testing at owner's expense, in accordance with Department requirements at least once every five years, beginning in 2007.

The last stack test was conducted on July 25, 2012. The test consisted on monitoring, sampling and analysis to determine VOC emission rates and the destruction efficiency of the RTO. Emissions of the following pollutants were evaluated during the test: MeCl₂, C₆H₆, 1,1,2,2-TCA, CCl₄, CHCl₃, TCE, PCE and HCl. The results showed compliance with the limits specified in SC I.1 to I.10. For test results refer to the summary table included earlier on this report, as part of Item I.

SC 2. Verification of the VOC capture efficiency of the exhaust system shall be conducted by testing in accordance with Department requirements. The VOC capture efficiency of the exhaust system shall be determined in accordance with Procedure T, and by visual observation of the air movement and direction. Alternative testing procedures shall be approved by AQD District Supervisor. The verification tests shall be conducted at least once every year and shall notify the department prior to conducting the tests.

The facility notified AQD before conducting the test for year 2014. The fieldwork for the East Buildings was conducted during routine operations on October 29, 2014. EQ facility personnel verified the air flow direction within the East Building and EQ retained Horizon Environmental Corporation (Horizon) to summarize the results of the field verification activities. A copy of the report is attached. According to the report, the airflow direction observations demonstrate an inward airflow direction at each Natural Draft Openings within the East Building. These results, when coupled with the historical calculation of the structural factors supporting the presence of a "permanent total enclosure", indicate that the East Building continues to meet the permanent total enclosure criteria of ROP No. MI-ROP-M4782-2010a.

VI. MONITORING/RECORDKEEPING

IN COMPLIANCE

SC. 1 to 4 – The following parameters from FG EAST are monitored on a continuous basis and five minute block averages of the monitored parameters are recorded: Air Flow, Baghouse Pressure Drop, Temperature of the RTO and the pH and the liquid flow rate of the caustic scrubber. Records are maintained on file for a period of 5 years. Excursions from the specified permit requirements are recorded and reported on the semiannual deviation reports submitted to AQD.

SC 5. The permittee shall maintain a written log for activities related to the RTO and baghouse conducted pursuant to the "Preventive Maintenance and Malfunction Abatement Program, Air Pollution Control Systems." The written log shall indicate the following:

- Date, time and duration of RTO & baghouse downtime.
- Date and description of maintenance performed on the RTO & baghouse.
- Date and description of repairs performed on the RTO & baghouse.

Written logs are maintained as part of their preventive maintenance procedures. Samples of the daily, weekly, monthly, and quarterly logs were provided during the inspection and are attached to the hard copy of this report. The semiannual reports include RTO downtime logs and comments are provided describing the type of adjustment or repairs.

SC 6. The permittee shall maintain a written log for activities related to the scrubber and air handling equipment conducted pursuant to the "Preventive Maintenance and Malfunction Abatement Program, Air Pollution Control Systems." The written log shall indicate the following: a) Date, time and duration of equipment downtime, b) Date and description of maintenance performed., c) Date and description of repairs performed.

Written logs are maintained as part of their preventive maintenance procedures. Samples of the daily, weekly, monthly, and quarterly logs were provided during the inspection and are attached to the hard copy of this report.

SC 7. The facility shall maintain the following records for FG EAST: a) The volume of each waste stream treated - monthly record. b) VOC content in percent by weight present in each waste stream prior to treatment, based on generator information - daily record. c) Average daily VOC content (% by weight) of waste streams - daily record. d) Monthly and 12-month rolling total VOC emissions according to the method outlined in Appendix 7A-S1 of the ROP.

The cited records are maintained and submitted to AQD as part of the VOC emissions semiannual reports. In addition to a, b, c and d above, the reports identify the location (East or West) where the waste will be treated. The semiannual reports from June to December added flags to mark the waste streams as hazardous or not hazardous. The analysis of the "DD VOHAP WASTE REPORTS" submitted for year 2014 suggests that the facility is in compliance with this condition of the permit. The maximum volume of waste received at FG EAST was 1.8 MM Gallons in October and the maximum 12-month rolling was 17.4 MM gallons, also in October. We have been informed that Appendix 7A-S1 is used for the calculations of VOC emissions. There is currently an open discussion regarding the methods that are used by EQ US Ecology facilities to identify the VOCs being processed. To this regard, EQ submitted a report on August 2015 and AQD is evaluating it.

SC 8. The facility shall prepare monthly report summarizing the amount and the VOC content (in percent by weight) of waste treated and the total VOC input in order to monitor the cumulative VOC emissions for the preceding 12 months.

Monthly reports are prepared. The daily records showed percentage of VOCs in the waste treated. The values were at 2% or below for hazardous waste and from zero up to a maximum of 11 % for non-hazardous wastes. These values are in compliance with the Material Limits for FG_EAST. In 2014, the maximum monthly VOC in waste at FG_EAST was 0.14 tons (in December) and the maximum 12-month rolling was 1.24 tons, in April.

SC 9. IN COMPLIANCE, but further discussion is needed - On a monthly basis, the facility shall maintain the following records for FG_EAST: a) PM concentration in pounds per thousand pounds of exhaust gas according to the method outlined in Appendix 7B-S1 of the ROP. b) Hourly PM-10 emission rate according to the method outlined in Appendix 7B-S1 of the ROP. c) Monthly and 12-month rolling total PM-10 emissions according to the method outlined in Appendix 7B-S1 of the ROP

The facility is using the calculation methods outlined in Appendix 7B-S1 of the ROP to show compliance with the permit limit requirements for PM and PM-10. However, they are not using the formula in the Appendix "in conjunction" with monitoring data or "actual" operational values (i.e. actual baghouse inlet loading, exhaust air flow, etc.); but instead, they use the suggested "fixed" figures cited on the ROP. Therefore, the resulting PM and PM-10 emissions are constant values, although probably "worse-case" scenarios. In addition, we reviewed the 2014 annual emissions reported on MAERS for PM-10. These emissions were calculated based on the PM emission rates determined in a stack test conducted on September 25, 2007. They used the PM results to estimate PM-10 emissions in tons per year based on the actual annual amount of waste treated at FG_EAST. To evaluate compliance with the PM and PM-10 emission limits, we have used the calculated values from Appendix 7B-S1. Although we expect the "actual" PM or PM-10 emissions rates to be minor and below the permit limits, it is important to clarify this item so that the ROP requirements could be modified if necessary.

SC 10. FURTHER EVALUTION IS NEEDED (See SC 9 comment).The permittee shall calculate and limit the VOC and PM and PM-10 emissions from FG_EAST according to the methods outlined in Appendix 7-S1 unless a replacement method acceptable to the AQD has been submitted and approved.

SC 11. FURTHER EVALUTION IS NEEDED . The facility shall maintain records, including the time, date and duration of air flow reduction and/or non-negative static pressure, to assure the operating procedures are being met as specified in the startup, shutdown and malfunction plan. The facility maintains these records but we would like to conduct a more detailed review of those records.

SC 12. AIR POLLUTION CONTROL PROCEDURES WERE NOT EVALUATED - Upon detecting an excursion or exceedance through the parametric monitoring of pressure drop or RTO combustion temperature, the permittee restores operation of FG_EAST to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

VII. REPORTING

Reporting of deviations pursuant to General Conditions 21 and 22 of Part A of ROP

SC 1. IN COMPLIANCE - Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A were received by AQD Detroit district office by March 15 for reporting period July 1 to December 31 and by September 15 for reporting period January 1 to June 30.

SC 2. IN COMPLIANCE - Annual certification of compliance pursuant to General Conditions 19 and 20 of ROP Part A. Reports were received by AQD Detroit district office by March 15 for the previous calendar year.

SC 3. IN COMPLIANCE - The permittee submits, on a semi-annual basis, the monthly VOC reports in order to monitor the cumulative VOC emissions for the preceding 12 months.

SC 4. IN COMPLIANCE - Results of performance tests have been submitted to the department in the format prescribed by the applicable reference test method within 60 days after the last date of the test. The most recent stack test required under FG_WEST was cited above in Section II of this report

SC 5. IN COMPLIANCE - Each semiannual report of monitoring deviations includes summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, the report includes a statement that there were no excursions and/or exceedances.

SC 6. IN COMPLIANCE - Each semiannual report of monitoring deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime.

The facility had reported reoccurring air flow deviations at FG_EAST during the years 2012 and 2013. To prevent this type of deviation the facility indicated that a new type of air flow meters was going to be installed. I asked for a follow up on this matter during my visit on April 2, 2015. I was told that they originally planned on installing a new air flow meter, but unfortunately after consulting with SW Controls the duct work design at the facility could not maintain a different type of flow meter. They changed the flow meter a few years ago to the same type and that action appeared to have reduced if not eliminated the deviations related to the meter. An evaluation of the deviation reports for year 2014 was conducted by AQD. For details about deviations refer to the report prepared by AQD, which has been attached as an Appendix to the hard copy of this document.

VIII. STACK/VENT RESTRICTION(S)

IN COMPLIANCE - The design of the stack at FG_EAST has not been modified since the last re-issuance of the ROP. According to the ROP, the maximum diameter for the exhaust stack shall be 54 inches in diameter and the maximum height above the ground shall be 75 feet. The system has been designed so that the exhaust gases from the stack discharge unobstructed vertically upwards to the ambient air. Visible emissions from the stack were not detected during the tour of the facilities.

IX. OTHER REQUIREMENT(S)

SC 1. PARTLY EVALUATED -The permittee shall comply with all applicable provisions of the National Emission Standards for Benzene Waste Operations as specified in 40 CFR Part 61 Subparts A and FF. Appeared to be in compliance

SC 2. NOT EVALUATED - The emissions of asbestos, the filter fabric, the operation of the fabric filter baghouse dust collectors and the process and disposal of all asbestos containing waste shall comply with the specifications found in the NESHA (National Emission Standards

for Hazardous Air Pollutants) for Asbestos in 40 CFR Part 61 Subpart M.

SC 3. PARTLY EVALUATED –The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations as specified in 40 CFR Part 63 Subparts A and DD.

SC 4. FURTHER EVALUATION IS NEEDED TO DETERMINE COMPLIANCE The permittee shall implement the "Preventive Maintenance and Malfunction Abatement Program, Air Pollution Control Systems." This plan shall be made available to the Department upon request.

SC 5. MODIFICATION OF CAM NOT REQUESTED The permittee shall notify the AQD for the need to modify the CAM plan if the approved monitoring is found to be inadequate and shall submit a proposed modification to the plan if appropriate.

SC 6. FURTHER EVALUATION IS NEEDED TO DETERMINE COMPLIANCE The permittee shall comply with all requirements of 40 CFR Part 64, Compliance Assurance Monitoring.

FG WEST

I. EMISSION LIMIT(S)

IN COMPLIANCE

With the exception of PM-10, the pollutants and the corresponding emission rates limits listed on the ROP for FG_WEST are the same as those cited for FG_EAST, including the time periods and operating scenarios. However, the facility is not required to test for VOCs and HAPs emissions at FG_WEST. Instead, for calculations and compliance demonstration, the facility uses accepted procedures cited below on sections V.1, VI.6 and VI.8 of this report

The PM₁₀ (cumulative emissions) limits are: 9.6 lbs /hr and 20 tpy (12-month rolling time). The facility uses Appendix 7-BS1 to estimate these emissions (Read previous comment about these calculations under FG_EAST – Section VI).

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	COMPLIANCE
1. VOC in waste	Maximum of 500 ppm	Monthly average	YES AQD evaluated the VOC reports for year 2014. According to the records, the percentage of VOC in the wastes received at the West treatment facility, were below 0.5%, varying from 0 to 0.05 %. Due to the format in which the data is presented, the VOC monthly averages couldn't be evaluated. Likewise, additional information is needed to evaluate compliance with material limits cited on items 3 and 4. AQD will request the facility to provide suitable data to conduct the analysis and derive a conclusion.
2. VOC in waste	Maximum of 0.5% by weight	Daily average for waste accepted for treatment	
3. VOC	VOC evaporation rate from the waste treatment process shall not exceed 60% by weight.	Per ROP - SC V.1	
4. Volatile Organic HAP in waste	Less than 500 ppmw based on the HAP content of the off-site material stream at the point-of-delivery	Annual average per off-site material stream	

III. PROCESS/OPERATIONAL RESTRICTION(S)

SC 1. IN COMPLIANCE - During normal operation defined (as defined in the ROP). The required airflow through FG_WEST shall be maintained between 80,000 cubic feet per minute

(cfm) and up to a maximum of 110,000 cfm. The day of the inspection, on April 29, 2015, the airflow recorded by the operator was approximately 81,728 cfm

SC 2. IN COMPLIANCE - The permittee operates the baghouse dust collector 24 hours a day and maintains negative static pressure in the waste treatment building at all times during normal operation. Refer to Section V.3 below for verification of the negative static pressure.

SC 3. IN COMPLIANCE - The west bag differential pressure shall be maintained between 1.5 and 8.0 inches of water column (wc). The day of the inspection, on April 29, 2015, the pressure drop was 6.9" wc . The facility records any pressure drop excursions from the range specified.

SC 4. IN COMPLIANCE - Not more than one waste treatment process building overhead door is open at a time.

SC 5. IN COMPLIANCE - No waste subject to the control requirements of Benzene NESHAP is treated at FG_WEST. Benzene concentration and Total Annual Benzene (TAB) quantity for MDWT are calculated in accordance to 40 CFR 61, subpart FF. Reports are submitted to AQQ and showed compliance.

SC 6. IN COMPLIANCE - No wastes containing any of the prohibited compounds listed on Section 1, FGWEST, SC III.6 of the ROP are treated at FG_WEST.

To assure that permit conditions III.5 and III.6 are met, the facility has a very strict control/evaluation of the type of waste that is accepted for treatment. A Waste Profile/waste characterization shall be provided to EQ before a waste is brought to the treatment site. EQ takes about two days to review the "Waste Profile" and make a determination. AQD has not received any notification of new compounds to be added to the list.

IV. DESIGN/EQUIPMENT PARAMETER(S)

IN COMPLIANCE

SC IV.1 & 2 and VI.1 & 2 (records) -- -The permittee shall install, calibrate, maintain and operate in a satisfactory manner the monitoring devices to monitor on a continuous basis, and record five minute block averages of: the air flow through FG_WEST and the pressure drop of the treatment building baghouse dust collector.

The parameters are monitored and recorded in accordance with the permit conditions. Some of the operational parameters were verified by reading the computer screen in the control room during the facility tour. The device calibration for year 2015 was completed on May 16, 2015. The monitoring devices and the frequency of calibration are both cited on the following paragraphs.

SC 1. The west airflow meter is a Pitot Tube style flowmeter fitted with an ABB 600 T series smart pressure transmitter calibrated bi-annually.

SC 2. The west bag house has an ABB 600T series pressure transmitter calibrated bi-annually.

SC 3. The permittee shall install, maintain and operate limit switches in all overhead doors, so as to restrict the maximum operation opening heights to 20 feet except as needed for vehicle or equipment ingress and egress.

The west overhead doors incorporate limit switches to control opening height. They are maintained by lubrication on a quarterly basis, verifying the opening height and bottom seal.

SC 4. Sludge feed and storage tank No. 11 (EUSLUDGETANK11) shall be vented into the FGWEST waste treatment process building.

The installation was built to accommodate this venting; however, this was not checked during the facility tour.

V. TESTING/SAMPLING

SC 1. NOT EVALUATED - The VOC evaporation rate from the waste treatment process may be established at 60% by weight pursuant to "Air/Superfund National Technical Guidance, Study Series, Emission Factors for Superfund Remediation Technologies," EPA-450/1-901-001, March 1991, for calculation and compliance demonstration. The permittee may use site specific data, based on testing, with the approval of the AQD District Supervisor, to establish an alternate evaporation rate.

SC 2. IN COMPLIANCE - The permittee shall screen each waste stream for the compounds listed in SC III.6, using a method acceptable to the AQD. (Refer to III.6 above)

SC 3. IN COMPLIANCE - Once a year, the facility requires to verify the negative static pressure in the waste treatment building by testing in accordance with DEQ requirements. AQD has to be notified prior to conducting the test. On November 14, 2014 a smoke test was conducted within the West Building. Ms. Melinda Keillor of EQ (previous HSE contact at EQ) took active part on the test and notified AQD prior to conducting the test. For details about the procedure refer to the attached report prepared by "Horizon". The smoke test and airflow direction observations demonstrated a negative static pressure condition within the West Building, and consequently indicate that the West Building continues to meet the negative static pressure criteria of ROP No. MI-ROP-M4782-2010a. The facility conducts the verification test once every year

VI. MONITORING/RECORDKEEPING

Compliance with SC 1 and SC 2 were evaluated earlier under Section IV.

IN COMPLIANCE –SC 3 to 7 –Compliance substantiation is provided below for each SC

SC 3. Written logs are maintained as part of their Preventive Maintenance Procedures, Malfunction Abatement Program, Air Pollution Control Systems Samples. Excursions from the specified permit limits are recorded and reported on the semiannual deviation reports submitted to AQD.

Samples of their daily, weekly, monthly, and quarterly logs were provided during the inspection and they are attached to the hard copy of this report. For FG_WEST the records include: the date, time and duration of baghouse downtime (if any); the description of maintenance performed on the baghouse (if any) and the date and description of repairs performed on the baghouse (if any).

SC 4. Refer to FG_EAST -section VI 9 and VI.10 for comments about PM and PM-10 records

SC 5. The VOC Reports show records of the volume of waste stream treated at FG_WEST, the VOC content in the waste (daily % by weight), and monthly and 12-month rolling

total VOC emissions. For 2014 the highest monthly volume of waste stream treated at FGWEST was 1.821 MM gallons (in October) and the highest 12-month rolling was 17.07 MM gallons (in December). The percentage of VOC in the waste was always below 0.05 %. The VOC emission rates were very low with maximum monthly recoded for March as 0.012 tons, and the maximum 12-month rolling was about 0.14 tons.

SC 6. The facility calculates and records the VOC, PM and PM-10 emissions from FG_WEST according to the method outlined in Appendix 7-S1

SC 7. The facility prepares monthly report summarizing the amount and VOC concentration (in ppm) of each waste stream treated, and the total VOC input (in pounds) to FG_WEST in order to monitor the cumulative VOC emissions for the preceding 12 months; monthly record.

SC 8. NOT EVALUATED - The permittee shall perform an initial determination of the average Volatile Organic HAP (VOHAP) concentration for each off-site material stream using the procedures specified in §63.694(b) prior to the first time any portion of the off-site material stream is treated in FG_WEST. Thereafter, the permittee shall review and update, as necessary, this determination at least once every 12 months following the date of the initial VOHAP determination.

SC 9. IN COMPLIANCE - The facility keep records of the VOHAP concentration of each off-site material stream processed in FG_WEST for each month and 12-month rolling time period. The records submitted under the title "DD VO HAP WASTE REPORTS" received with the semiannual reports seem to satisfy this condition.

SC 10. NOT EVALUATED - The permittee shall maintain records for each waste stream treated in FG_WEST sufficient to demonstrate that the waste was not subject to the controls requirements of the National Emission Standard for Benzene Waste Operations, 40 CFR Part 61 Subpart FF.

SC 11. NOT EVALUATED - The permittee shall develop a written operating procedure to assure that the requirements of S.C. III.1 are met before the air flow through FG_WEST is reduced below the minimum air flow specified in S.C. III.1, or before the permittee no longer maintains negative static pressure as specified in S.C. III.2. The permittee shall maintain records, including the time, date and duration of air flow reduction and/or non-negative static pressure, to assure the operating procedures are being met as specified in the startup, shutdown and malfunction plan.

SC 12. NOT EVALUATED - Upon detecting an excursion or exceedance through the parametric monitoring of the pressure drop, the permittee shall restore operation of FG_WEST to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

VII. REPORTING

IN COMPLIANCE

The facility is in compliance with all the following special conditions:

SC 1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of ROP Part A.

SC 2. Timely submittal of semiannual reports of monitoring and deviations pursuant to General Condition 23 of ROP Part A.

SC 3. Timely submittal of the annual certification of compliance pursuant to General Conditions 19 and 20 of ROP Part A.

SC 4. On a semi-annual basis submittal of the monthly report summarizing the amount of waste treated, the VOC concentration, and the total VOC input in order to monitor the cumulative VOC emissions for the preceding 12 months.

SC 5. Each semiannual report of monitoring deviations includes all the required information cited on ROP FG_WEST, Section VII - 5. If there are no excursions and/or exceedances in the reporting period, then the report includes a statement that there were no excursions and/or exceedances.

SC 6. The semiannual report of monitoring deviations includes the summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then the report includes a statement that there were no periods of monitor downtime.

An evaluation of the deviation reports for year 2014 was conducted by AQD. For details about deviations refer to the report prepared by AQD, which has been attached as an Appendix to the hard copy of this document.

The following comments were provided by the facility when AQD requested an explanation about how they identify deviations and keep up their maintenance logs when equipment is down and/or during start up or shut-down. This applies to both FG_EAST and FG_WEST:

"The East and West side monitoring is done by a data logging program. The facility compares the information to the requirements of the ROP to determine whether or not there was a deviation. The daily checklist is completed each morning prior to beginning waste processing. This is to ensure the equipment is functioning properly. If maintenance needs to be done, notes will be placed on the maintenance forms. Then, periodically throughout the day, an operator checks the function of the Pollution control devices to make sure everything is running properly".

For example, at FG_EAST, they have a light outside the control room that turns on if the RTO is down which signals all processing to stop. Once the data is reviewed and it is determined that there has been a deviation, the maintenance logs are reviewed and the deviation is discussed with the maintenance personnel that worked on the issue. They populate the RTO maintenance log with the deviation comments in order to have the information available in a convenient format.

Throughout start up, shutdown and malfunction activities the parameter requirements may not meet the requirements of the ROP. It's not likely to expect an emission unit to be within the ROP parameters if it is shut down or if start-up activities require adjustments in order to get parameters in compliance. Waste is not processed until the ROP operational parameters are in place. Adjustments are not necessarily made because there is a deviation. There are a number of factors that could warrant a change, and the maintenance personnel have to identify them. The parameters are in place to ensure a device is operating in a manner that will allow it to control the emissions from the process."

VIII. STACK/VENT RESTRICTION(S)

IN COMPLIANCE

The design of the stack at FGWEST has not been modified since the last re-issuance of the ROP. According to the ROP, the maximum diameter for the exhaust stack shall be 54 inches in diameter and the maximum height above the ground shall be 75 feet. The system has been designed so that the exhaust gases from the stack discharge unobstructed vertically upwards to the ambient air. Visible emissions from the stack were not detected during the tour of the facilities.

IX. OTHER REQUIREMENT(S)

This section of the ROP contains the same special conditions cited for FG_EAST. Refer to FG_EAST for compliance evaluation.

FGLIQWASTETKS

The tanks are sealed (per SC IV.4), and the conservation vents for these tanks are routed through two activated carbon canisters that are connected in series (Siemens Vent Scrub™)- per SC IV.1. The canisters were observed to be equipped with saturation indicators as required by permit condition SC IV.2. The indicators are monitored as part of the facility's daily preventive maintenance check. The replacement of the canister is done in accordance to the permit requirements (per SC IV. 3).

No wastes containing any of the prohibited compounds listed in special condition III.2 are stored in the tanks. This compound list was included to prevent nuisance odors from occurring. No waste subject to Benzene NESHAP is stored in FGLIQWASTETKS.

To assure compliance with SC III.1 and III.2, the facility implements strict controls for the approval of waste to be treated at the site (see item III.6 on previous section of this report)

FGSILOS

In compliance with SC III.1, each silo is equipped with a baghouse to control dust emissions associated with the filling of the silos. In compliance with SC. V.1 and as it is described in Appendix 3-S1 of the ROP, the operators conduct visible emissions observations once per calendar month during a period when each silo is being loaded. They keep monthly logs of their observations (per SC VI.1). Records are kept for a period of five years. A monthly log with the readings collected on 4/5/2015 was provided during the inspection.

FGTMTFACILITY

The overall requirements on the treatment facility limit the waste throughput to 576,000 gallons per calendar day and 210,240,000 gallons per 12-month rolling time period.

According to the facility records for 2014, an average of 121,000 gallons of material per day was processed at the plant. The maximum 12-month rolling total for 2014 was 34,348,909 gallons, which is 1/6 of the limit capacity set for FGTMTFACILITY in SC. II.2. Additionally, as indicated in previous sections of this report, the facility maintains daily, monthly, and 12-month rolling time period records -as determined at the end of each calendar month- of the type (hazardous & nonhazardous) and amount of waste processed and the VOC concentrations of the wastes.

The 12-month rolling total VOC in waste is limited to 1,584 tons per year (tpy) and the records showed a maximum of 83.26 tpy in April 2014. That's only 5.25 % of the total amount of waste that MDWTP could potentially treat. As far as required fugitive dust emission control measures are concerned, sweeping logs and dust suppressant applications are recorded.

5. FINAL COMPLIANCE DETERMINATION

Based upon the on-site inspections and the review of the monitoring/reporting records and semiannual reports for year 2014, the Michigan Disposal Waste Treatment Plant appears to be in substantial compliance with the Special Conditions and Requirements cited on Section 1 of the ROP No. MI-ROP-M4782-2010a.. As highlighted in the report, some of the conditions in the ROP for Section 1 were either not assessed during this inspection, or needed further evaluation to determine compliance. Those requirements, in conjunction with Section 2 and 3 of the ROP, will be evaluated in a follow-up inspection that will be planned during fiscal year 2017, which concurs with the renewal of the ROP.

NAME Offandoral

DATE 10/28/15

SUPERVISOR JIK

