

GREEN DROP REQUIREMENTS 2013

Data Assessment Period: July 2011 to June 2012



South African Wastewater Service Incentive-based Regulation



No	Key Performance Area	Sub-Requirements	Sub-Requirement Performance Weighting
1	Process Control, Maintenance and Management Skill 10%	(a) A copy (certified) of Registration Certificate of Works displaying Classification (Regulation 2834)	Weighting = 10% <ul style="list-style-type: none"> ◆ Complying with Regulation 2834 = 100%
		(b) Copies (certified) of Registration Certificates of Process Controllers and Supervisors (Regulation 2834) <ol style="list-style-type: none"> 1. Copies of the classification certificates of all process controllers/operators and supervisors/superintendents must be uploaded on the GDS; 2. Compliance with Regulation 2834 (must comply at least 50% in each of the shifts); WSI must indicate shift patterns or measures in place when no shift work is undertaken; 3. WSI must indicate process controllers and/or supervisors that are 'shared' across different plants/sites. <i>Note: Process Control Compliance Rate will be calculated from the available organogram or lists to be presented to the inspectors.</i> 	Weighting = 40% <ul style="list-style-type: none"> ◆ Fully complying = 100% ◆ Complying with all requirements for more than 70% of the Process Controllers = 70% ◆ All PCs registered but >50% <70% PCs complying with standards = 60%. ◆ Supervisor not complying but most PCs complying = 50%. ◆ Only Supervisor complying = 50%.
		(c) Proof of Maintenance Team used for general maintenance work at the plant & pump-stations(both mechanical and electrical) <ol style="list-style-type: none"> 1. Information on in-house staff or external contractor/s 2. Provide additional proof of competency of team (e.g. Qualification & Experience & Trade-test) 3. Provide a site specific operation and maintenance schedule (routine / scheduled) 4. Contract or Logbook with maintenance entries will serve as proof of the above aspects 	Weighting = 10%
		(d) Proof of a 'site-specific' Operation & Maintenance Manual O&M manual to contain: <ol style="list-style-type: none"> 1. structural, 	Weighting = 30% <ul style="list-style-type: none"> ◆ Complying with >10 of Sub-requirements = 100% ◆ Complying with 8 = 80%

		<ol style="list-style-type: none"> 2. mechanical, 3. electrical detail of plant, 4. design specifications of plant, 5. reference to drawings, 6. operational schedules, 7. maintenance schedules, 8. process detail and control, 9. instrumentation specification/type, 10. fault finding, 11. monitoring, 12. pump curves, 13. supportive appendices 	<ul style="list-style-type: none"> ◆ Complying with 6 – 7 = 60% ◆ Complying with 5 – 50% ◆ Complying with 4 = 40% ◆ Complying with 3 = 30% ◆ Complying with 2 = 20% ◆ Complying with <2 = 0%
		<p>(e) Operational Logbook</p> <ol style="list-style-type: none"> 1. A logbook is in place to record all incidents at the wastewater treatment works. 2. Evidence is presented that the logbook process is being implemented. 	<p>Weighting = 10%</p> <ul style="list-style-type: none"> ◆ Fully complying = 100% ◆ > Complying only with 1) = 70%
		<p>BONUS: Proof of Process Controllers Being Subjected to relevant training the past 24 months Provide proof of:</p> <ol style="list-style-type: none"> 1. Names of trainees and signature of attendance / Certificate 2. Date and training subject field 3. Training provider and content of training 	<ul style="list-style-type: none"> ◆ >50% of Process Control staff = 100% ◆ >30% <50% of Process Controllers = 50% ◆ >10% <30% = 30% ◆ 10% = 20% ◆ <10% = 0%
2	Wastewater Monitoring Programme Efficacy 15%	<p>(a) Details of Operational Monitoring:</p> <ol style="list-style-type: none"> 1. Proof of Operational Monitoring sites, determinands and frequency; 2. Samples must include: <ul style="list-style-type: none"> ◆ inflow, ◆ outflow, ◆ process flows, ◆ sludge; 3. Determinands monitored; 4. as per Authorisation / as per best practice per technology type; 5. Frequency: as per Authorisation /as per best practice. 	<p>Weighting = 25%</p> <ul style="list-style-type: none"> ◆ Adequate compliance with all 3 = 100% ◆ Partial Compliance with all 3 = 75% ◆ Adequately Complying with 2 = 60% ◆ Partially compliance with 2 = 50% ◆ Adequately complying with 1 = 40% ◆ Partially complying with only 1 = 25%
		<p>(b) Details of Compliance Monitoring (For ALL Effluent Discharges).</p> <ol style="list-style-type: none"> 1. Sampling Sites as per Authorisation; 2. Determinands as per Authorisation; (This would include determinands not categorised as Microbiological, Chemical or Physical, e.g. SAR) ; 3. Sampling frequency occurs as Authorisation Requirements 	<p>Weighting = 35%</p> <ul style="list-style-type: none"> ◆ Adequate compliance with all 3 = 100% ◆ Partial Compliance with all 3 = 75% ◆ Adequately Complying with 2 = 60% ◆ Partially compliance with 2 = 50% ◆ Adequately complying with 1 = 40% ◆ Partially complying with only 1 = 25%

		<p>Note1: For zero-effluent treatment systems - still need to monitor for impact on catchment / environment (for both lined and unlined systems). Where oxidation ponds are producing effluent for irrigational purposes then General Limits apply.</p> <p>Note 2: A monitoring programme alone will not be sufficient to obtain full score; Analyses results should proof implementation of the monitoring programme.</p>	
		<p>(c) Laboratory used:</p> <ol style="list-style-type: none"> Name lab for operational analysis (in-house or on-site) and lab for compliance analysis/checks (in-house or external) Provide the turnaround in laboratory analysis (in hours: from time of submission to time of results dissemination) 	<p>Weighting = 5%</p> <ul style="list-style-type: none"> Name plus proof = 100% Name = 30%
		<p>(d) Laboratory Credibility:</p> <ol style="list-style-type: none"> Certificate of Accreditation for applicable methods, Or Z-scores results following participation a recognised Proficiency Testing Scheme ($-2 \geq z$-score ≥ 2 are unacceptable) Or Proof of Intra- and Inter-laboratory proficiency (quality assurance as prescribed in Standard Methods) 	<p>Weighting = 20%</p> <ul style="list-style-type: none"> Adequately Complying with 1 of the 3 (for 80% or more of the Determinands monitored) = 100% Complying for 60 – 80% of the determinands = 80% Complying with 40 – 59% of Determinands = 50%
		<p>(e) Explain how monitoring results are used to amend/improve process controlling</p> <p>Practical example [The assessor will select at random analytical parameter/s from the presented analytical results to present an audit question. This might be checked during on-site assessment.]</p>	<p>Weighting = 15%</p>
3	Submission of Wastewater Quality Results 5%	<p>Proof of data submission to DWA (12 months)</p> <ol style="list-style-type: none"> 12 months of data submitted to DWA on the GDS WSA must ensure that 12 months' sets of results are submitted and recorded on the GDS prior to the assessment. Note: All compliance results' data required 	<ul style="list-style-type: none"> > 12 months = 100% (1) > 11 months = 50% (0.5) > 10 months = 20% (0.2) > <10months = 0% (0)
		<p>PENALTY: Penalty will apply should Wastewater results be available but not captured on GDS</p>	<p>Weighting = -5% (From Total)</p>
		<p>PENALTY: Penalty will apply should the Department find proof during / post assessment that the WSI is guilty of an offence as per Section 82 of the Water Services Act, by only submitting partial information (on GDS) in order to present a false impression of DWQ Performance and/or compliance.</p>	<p>Weighting = -7% (From Total)</p>
4	Effluent Quality Compliance 30%	<p>(a) Copy of authorisation, detailing Effluent Quality Standards.</p>	<p>Weighting = 20%</p> <ul style="list-style-type: none"> Adequate evidence of Authorisation = 100%.
		<p>a) 90% Microbiological Compliance; (e.g. E Coli; Faecal Coliforms) b) 90% Chemical Compliance; (e.g. COD, Ammonia, Nitrogen, Nitrate, Nitrite, Chlorine, Ortho-Phosphates, Fluoride, Arsenic, Cadmium, Copper, Manganese, Iron, Selenium, Zinc, Boron, etc.)</p>	<p>Weighting = 80%</p> <ul style="list-style-type: none"> Compliance with all 3 categories = 100% Compliance with (1) and (2) = 80% Compliance with (1) and (3) = 70%

		c) 90% Physical Compliance; (e.g. pH, Suspended Solids, Electrical Conductivity, Soap, Oil or Grease, etc)	<ul style="list-style-type: none"> ◆ Compliance with (2) and (3) = 60% ◆ Compliance with (1) only = 50% ◆ Compliance with (2) only = 35% ◆ Compliance with (3) only = 25%
		BONUS: 1. A practical Green Drop Improvement Plan (GDIP) in place – with baseline (current) score, tasks, responsible person, completion date, budget, target GDC score; 2. Implementation evidence and proof of management of process	<ul style="list-style-type: none"> ◆ Complying with both = 100% ◆ Complying only with (a) = 70%
		PENALTY: (a) Sludge treatment not managed / monitored. (Monitoring records must be produced); (b) In case of ponds systems, provide schedule for desludging of system.	Weighting = – 3% (From Total)
5	Wastewater Quality Risk Management 15%	(a) A practical and site specific Wastewater Risk Abatement Plan (W₂RAP) is in place which identify and prioritise risks, with measures to mitigate inefficiencies/inadequacies that result in non-compliance Implementation evidence and proof of management commitment	Weighting = 50%
		(b) Proof of a documented Wastewater Incident Management Protocol <ol style="list-style-type: none"> 1. Protocol to specify alert levels, response times, required actions, roles & responsibilities and communication measures/vehicles. 2. Register/Log of all spillage incidents. NB. Include Pump station failure (sewer collector system spillages)	Weighting = 20%
		(c) Provide evidence of implementation of Protocol (d) <i>Wastewater Quality Failure Incident and Sewer Spillage Incident register.</i>	Weighting = 30%
		BONUS: WSI is able to provide DWA with (a) Energy Demand Projections and (b) Consumption figures for the specific Wastewater Treatment works.	<ul style="list-style-type: none"> ◆ Complying with both = 100% ◆ Complying only with (b) = 70%
6	Bylaws (Local Regulation) 5%	(a) Proof of the Bylaws providing for the regulation of: <ol style="list-style-type: none"> 1. industrial (trade) effluent (volumes & quality) discharged into municipal system, 2. package plants, 3. decentralized systems, 4. vacuum tank discharges and 5. Spillages into the environment. 6. Storm-water connections to sewer system. 	Weighting = 40% <ul style="list-style-type: none"> ◆ Complying with >3 of Sub-requirements = 100% ◆ Complying with 3 = 80% ◆ Complying with 2 = 60% ◆ Complying with 1= 50%
		(b) Evidence of Bylaws enforcement by Local Authority <ol style="list-style-type: none"> 1. Proof of application of Bylaw clause in practice, supported by written notice/s to offender OR 2. Proof of adequate enforcement (informing relevant sectors and means of monitoring industrial or other sewer influent.) 	Weighting = 60%
		PENALTY:	Weighting = - 3% (From Total)

		<p>No evidence of any Industrial influent monitoring.</p> <ol style="list-style-type: none"> 1. <i>There must be proof in form of results to indicate WSA is performing its local regulation function as per Wastewater Services.</i> 	
		<p>BONUS:</p> <ol style="list-style-type: none"> 1. <i>Annual Publication of wastewater management performance against the requirements of the site-specific License conditions or General Authorisations</i> 2. <i>Name and date of publication, copy of information pertaining to audit question. Note: Communication must include compliance summary</i> 	
7	Wastewater Treatment Capacity 5%	<p>(a) Documented design capacity (hydraulic and organic) of the wastewater treatment facility</p> <ol style="list-style-type: none"> 1. Design capacity as Average Dry Weather Flow (ADWF) and COD load to the plant <p>and</p> <p>(b) Documented daily receiving flows over the 12months of assessed period (ideally ≤ than design capacity)</p> <ol style="list-style-type: none"> 1. <i>Evidence of daily flows and subsequent calculated averages. Measurement method to be explained</i> 2. <i>Evidence of peak wet weather flow to plant during rain events (record rain event and flow to plant)</i> 3. <i>Evidence of minimum night flow (minimum monitoring: monthly)</i> 4. <i>Water services institution is required to provide motivation/proof of accuracy of meter readings.</i> <p>(c) Monitoring of outflow volumes (available records).</p>	Weighting = 30%
		<p>(d) Medium to long term planning to ensure sufficient capacity for treatment system and to ensure effluent quality compliance;</p> <ol style="list-style-type: none"> 1. <i>Detailed Work-plan which stipulates type of work, associated budget and projected timeframe, as well as the planned output of this work.</i> 	Weighting = 40%
		<p>(e) Medium to long term planning to ensure sufficient capacity for collecting system</p> <ol style="list-style-type: none"> 1. <i>Detailed Work-plan which stipulates type of work, associated budget and projected timeframe, as well as the planned output of this work</i> <p><i>Note: When the WSI is motivating that 'no work' is needed, then provide basis for such standpoint (i.e. quantified design versus operational capacity, usage of system, expected housing developments, condition of treatment system)</i></p>	Weighting = 30%
8	Wastewater Asset Management 15%	<p>(a) Process Audit reporting (evidence required of audit findings and recommendations) on treatment facility efficacy. The audit to include the (design) capability of the plant to meet compliance standards, as well as actual performance of plant. Should've been done between July 2010 and June 2012.</p>	Weighting = 25%
		<p>(b) Evidence/plan of implementation of findings during year following Audit Report required.</p>	
		<p>(c) Site inspection of sewer reticulation network and pump-station/s. Provide evidence in form of</p>	Weighting = 15%

		capacity and condition assessment and recommendations of system. Report to include flow balance that provides evidence which % of total sewage is received at treatment plant. <i>Note: both the process audit and sewer network report could serve as baseline to the W₂RAP (may run concurrently with "system description and risk identification/rating)</i>	
		(d) Updated sanitation / wastewater Infrastructure Asset Register 1. Proof of Asset Register, evidence to be submitted. Asset register to include movable equipment and immovable infrastructure / assets with matching detail (age, value, condition, etc).	Weighting = 20%
		(e) Operation and maintenance budget and comparative expenditure detail for: 1. wastewater treatment (in cents/m ³), and 2. collection system (R/m ³) <i>The assessor will require the WSI to explain how these figures compare or are benchmarked to determine whether budget is (in)sufficient</i>	Weighting = 30% <ul style="list-style-type: none"> ◆ 50% score to proof of budget, 50% score to proof of expenditure against budget. ◆ Guide 1: low end technology = R0.50/Kl, medium to high end techno = R0.80-1.20/Kl ◆ Guide 2: R 55 000/(Ml/day plant capacity)
		(f) Maintenance records of pump-stations 1. Proof of maintenance work done on mechanical, electrical, civil per pump station	Weighting = 10%
Additional Bonus	Add 1: WSI is able to provide evidence of improvement partnership initiatives with smaller municipalities (Cross-pollination). Green Drop scores will serve as good evidence to measure the outcomes of such initiative/s.	NB: All the Bonuses will add up to a maximum of 17% (on the basis decreasing when applied to higher Green Drop scores.	
	Add 2: Proof of a Storm-water management plan detailing how storm-water entry is quantified, managed and monitored to prevent entry to sewer systems. Plan should also include measures to prevent sewage from entering storm water systems. Evidence of implementation required		
	Add 3: Water Demand Management Plan which provides a strategy and/or work plan that identify, quantify, monitor and manage leakages and water losses of any kind that (may) create an artificial water demand due to higher hydraulic loading of wastewater collection and treatment infrastructure. The bonus will be maximised should a wastewater flow balance be provided.		